

RESTRICTED USE PESTICIDE

For Retail Sale To and Use Only by Certified Applicators or persons under their direct supervision, and only for those uses covered by Certified Applicators certification.

This label supersedes any previously issued supplemental labeling.

This EPA registration expires December 20, 2018.



We create chemistry

Group 4 Herbicide

Engenia®

Herbicide

For weed control in Dicamba-tolerant (DT) cotton; Dicamba-tolerant (DT) soybean; asparagus; conservation reserve programs (CRP); corn; cotton; fallow cropland; farmstead turf (noncropland) and sod farms; grass grown for seed; pasture, hay, rangeland, and farmstead (noncropland); proso millet; small grain; sorghum; soybean; and sugarcane

Active Ingredient*:

Dicamba: N,N-Bis-(3-aminopropyl)methylamine salt of 3,6-dichloro-*o*-anisic acid 60.8%

Other Ingredients: 39.2%

Total: 100.0%

* Contains 48.38% dicamba (5 pounds acid equivalent per gallon or 600 grams per liter)

EPA Reg. No. 7969-345

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • DO NOT induce vomiting unless told to do so by a poison control center or doctor. • DO NOT give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed or inhaled. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

All mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof gloves
- A NIOSH-approved dust/mist filtering respirator with any R, P, or HE filter or a NIOSH-approved number prefix TC-84A.

See **Engineering Controls** for additional requirements. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate. Apply this product only as directed on the label.

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Ground and Surface Water Protection

Point-source Contamination

To prevent point-source contamination, **DO NOT** mix or load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. **DO NOT** apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be

maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent:

- Back-siphoning into wells
- Spills
- Improper disposal of excess pesticide, spray mixtures, or rinsate

Check valves or antisiphoning devices must be used on all mixing equipment.

Movement by Surface Runoff or Through Soil

DO NOT apply under conditions which favor runoff.

DO NOT apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for groundwater contamination. Groundwater contamination may occur in areas where soils are permeable or coarse and groundwater is near the surface. **DO NOT** apply to soils classified as sand with less than 3% organic matter and where groundwater depth is shallow. To minimize the possibility of groundwater contamination, carefully follow the specified rates as affected by soil type in the **Crop-specific Information** section of this label.

Movement by Water Erosion of Treated Soil

DO NOT apply this product through any type of irrigation system including sprinkler, drip, flood, or furrow irrigation. Ensure treated areas have received at least 1/2-inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

Endangered Species

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

Directions For Use

RESTRICTED USE PESTICIDE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This labeling must be in the user's possession during application.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Observe all precautions and limitations in this label and the labels of products used in combination with this product. Keep containers closed to avoid spills and contamination.

All applicable directions, restrictions, precautions, and **Conditions of Sale and Warranty** are to be followed.

RESTRICTED USE PESTICIDE

APPLICATION RECORD KEEPING AND TRAINING REQUIREMENTS

Record Keeping Requirements

Applicators must keep the following records for a period of two years; records must be generated within 14 days of application and a record must be kept for every individual application. Records must be made available to State Pesticide Control Official(s), USDA, and EPA upon request. The following information must be recorded and kept as required by the Federal Pesticide Record Keeping Program, 7 CFR Part 110:

1. **Full name of the certified applicator**
2. **Certification number of the certified applicator**
3. **Product name**
4. **EPA registration number**
5. **Total amount applied**
6. **Application month, day, and year**
7. **Location of the application**
8. **Crop or site receiving the application**
9. **Size of area treated**
10. **Training Requirement:** proof that the applicator completed training described in this section.
11. **Application Timing:** whether the applicator applied this product preemergence or, the number of days after planting if the applicator applied this product postemergence.
12. **Receipts of purchase:** receipts for the purchase of this product.
13. **Product Label:** a copy of this product label(s), and any state special local needs label that supplements this label.
14. **Sensitive Crops Awareness:** Document that the applicator checked an applicable sensitive crop registry; or document that the applicator surveyed neighboring fields for any sensitive areas or susceptible crops prior to application. At a minimum, records must include the date the applicator consulted the specialty crop registry or surveyed neighboring fields, and the name of the specialty crop registry the applicator consulted.
15. **Spray System Cleanout:** Document that the applicator complied with the section of this label titled: **"Spray System Equipment Clean-out"**. At a minimum, records must include the date the applicator performed the required cleanout, and cleanout method that the applicator followed.
16. **Tank Mix Products:** a list of all products (pesticides, adjuvants, and other products) that the applicator tank mixed with this product for each application. Include EPA registration numbers in the case of any pesticides.

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RESTRICTED USE PESTICIDE

APPLICATION RECORD KEEPING AND TRAINING REQUIREMENTS *(continued)*

17. **Start and Finish Times:** the time the applicator begins and the time the applicator completes applications of this product.
18. **Nozzle Selection:** which spray nozzle the applicator used to apply this product, and the nozzle pressure the applicator set the sprayer to.
19. **Air Temperature:** the air temperature at boom height at the time the applicator starts and finishes applications of this product.
20. **Wind Speed and Direction:** the wind speed at boom height at the time the applicator starts and finishes applications of this product, and the wind direction at the time the applicator starts and finishes applications of this product.

Training Requirements

Prior to applying this product, all applicators must complete dicamba or auxin-specific training. If training is available and required by the state where the applicator intends to apply this product, the applicator must complete that training before applying this product in-crop. If your state does not require auxin or dicamba-specific training, then the applicator must complete dicamba or auxin-specific training provided by one of the following sources: a) a registrant of a dicamba product approved for in-crop use with dicamba-tolerant crops, or b) a state or state-authorized provider.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about **Personal Protective Equipment (PPE)** and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the WPS.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **24 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as, plants, soil, or water is:

- Coveralls worn over short-sleeved shirt and short pants
- Chemical-resistant footwear plus socks
- Waterproof gloves
- Chemical-resistant headgear for overhead exposure
- Protective eyewear

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides. **Engenia® herbicide** freezes around 15° F and is stable under conditions of freezing and thawing. Product that has been frozen should be thawed and recirculated prior to use.

Pesticide Disposal

Wastes resulting from this product may be disposed of on-site or at an approved waste disposal facility. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under **Subtitle C** of the **Resource Conservation and Recovery Act**. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake

(capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake

(capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

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STORAGE AND DISPOSAL (continued)

Container Handling (continued)

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to take if material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

Engenia® herbicide is a water-soluble herbicide that provides postemergence and moderate rate-dependent residual control of many annual broadleaf weeds. **Engenia** is also active on many biennial and perennial broadleaf weeds as well as woody brush and vines (refer to **Table 1** for weeds controlled or suppressed).

Engenia can be used in specific field and row crops, fallow and postharvest croplands, and sod farms. **Engenia** does not control grass weeds and must be used sequentially or tank mixed with a grass herbicide for a complete weed control program. See **Tank Mixing Information** section for important information on herbicide tank mixes or **Crop-specific Information** section(s) for recommendations on sequential programs.

Table 1. Weeds Controlled or Suppressed

Engenia will control or suppress the following weeds when used at rates described in **Table 2**.

Common Name	Scientific Name
Annuals	
Alkanet	<i>Lithospermum arvense</i>
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Amaranth, Powell	<i>Amaranthus powellii</i>
Amaranth, spiny	<i>Amaranthus spinosus</i>
Aster, slender	<i>Aster subulatus</i>
Bedstraw, catchweed	<i>Galium aparine</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Broomweed, common	<i>Gutierrezia dracunculoides</i>
Buckwheat, tartary	<i>Fagopyrum tataricum</i>
Buckwheat, wild	<i>Polygonum convolvulus</i>
Buffalobur	<i>Solanum rostratum</i>
Burclover, California	<i>Medicago polymorpha</i>
Burcucumber	<i>Sicyos angulatus</i>
Buttercup, corn	<i>Ranunculus arvensis</i>
Buttercup, creeping	<i>Ranunculus repens</i>
Buttercup, roughseed	<i>Ranunculus muricatus</i>
Buttercup, western field	<i>Ranunculus occidentalis</i>
Carpetweed	<i>Mollugo verticillata</i>
Catchfly, nightflowering	<i>Silene noctiflorum</i>
Chamomile, corn	<i>Anthemis arvensis</i>
Chervil, bur	<i>Anthriscus caucalis</i>
Chickweed, common	<i>Stellaria media</i>
Clover	<i>Trifolium</i> spp.
Cockle, corn	<i>Agrostemma githago</i>
Cockle, cow	<i>Vaccaria pyramidata</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Copperleaf, hophornbeam	<i>Acalypha ostryifolia</i>
Cornflower	<i>Centaurea cyanus</i>
Croton, tropic	<i>Croton glandulosus</i>
Croton, woolly	<i>Croton capitatus</i>
Daisy, English	<i>Bellis perennis</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Annuals (continued)	
Dragonhead, American	<i>Dracocephalum parviflorum</i>
Eveningprimrose, cutleaf	<i>Oenothera laciniata</i>
Falseflax, smallseed	<i>Camelina microcarpa</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Flixweed	<i>Descurainia sophia</i>
Fumitory	<i>Fumaria officinalis</i>
Goosefoot, nettleleaf	<i>Chenopodium murale</i>
Hempnettle	<i>Galeopsis tetrahit</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed (Marestail)	<i>Conyza canadensis</i>
Jacob's-ladder	<i>Polemonium caeruleum</i>
Jimsonweed	<i>Datura stramonium</i>
Knawel (German moss)	<i>Scleranthus annuus</i>
Knotweed, prostrate	<i>Polygonum aviculare</i>
Kochia ^a	<i>Kochia scoparia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lettuce, miner's	<i>Claytonia perfoliata</i>
Lettuce, prickly	<i>Lactuca serriola</i>
Mallow, common	<i>Malva neglecta</i>
Mallow, Venice	<i>Hibiscus trionum</i>
Mayweed	<i>Anthemis cotula</i>
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>
Morningglory, tall	<i>Ipomoea purpurea</i>
Mustard, black	<i>Brassica nigra</i>
Mustard, blue	<i>Chorispora tenella</i>
Mustard, tansy	<i>Descurainia pinnata</i>
Mustard, treacle	<i>Erysimum repandum</i>
Mustard, tumble	<i>Sisymbrium altissimum</i>
Mustard, wild	<i>Sinapis arvensis</i>
Mustard, yellowtop	<i>Sinapis</i> spp.
Nightshade, black	<i>Solanum nigrum</i>
Nightshade, cutleaf	<i>Solanum triflorum</i>
Pennycress, field	<i>Thlaspi arvense</i>
Pepperweed, Virginia	<i>Lepidium virginicum</i>
Pigweed, prostrate	<i>Amaranthus blitoides</i>
Pigweed, redroot (rough)	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, tumble	<i>Amaranthus albus</i>
Pineappleweed	<i>Matricaria matricarioides</i>
Poorjoe	<i>Diodia teres</i>
Poppy, red horn	<i>Glaucium corniculatum</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane, common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Radish, wild	<i>Raphanus raphanistrum</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Annuals (continued)	
Ragweed, giant	<i>Ambrosia trifida</i>
Ragweed, lanceleaf	<i>Ambrosia bidentata</i>
Rocket, London	<i>Sisymbrium irio</i>
Rocket, yellow	<i>Barbarea vulgaris</i>
Rubberweed, bitter	<i>Hymenoxys odorata</i>
Salsify	<i>Tragopogon porrifolius</i>
Senna, coffee	<i>Senna occidentalis</i>
Sesbania, hemp	<i>Sesbania exaltata</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Sicklepod	<i>Cassia obtusifolia</i>
Sida, prickly (Teaweed)	<i>Sida spinosa</i>
Smartweed, green	<i>Polygonum scabrum</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Sneezeweed, bitter	<i>Helenium amarum</i>
Sowthistle, annual	<i>Sonchus oleraceus</i>
Sowthistle, spiny	<i>Sonchus asper</i>
Spanish needles	<i>Bidens bipinnata</i>
Spikeweed, common	<i>Hemizonia pungens</i>
Spurge, prostrate	<i>Chamaesyce humistrata</i>
Spurry, corn	<i>Spergula arvensis</i>
Starbur, bristly	<i>Acanthospermum hispidum</i>
Starwort, little	<i>Stellaria graminea</i>
Sumpweed, rough	<i>Iva ciliata</i>
Sunflower, common (wild)	<i>Helianthus annuus</i>
Thistle, Russian	<i>Salsola iberica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Waterhemp	<i>Amaranthus tuberculatus</i>
Waterprimrose, winged	<i>Ludwigia decurrens</i>
Wormwood	<i>Artemisia annua</i>
Biennials	
Burdock, common	<i>Arctium minus</i>
Carrot, wild	<i>Daucus carota</i>
Cockle, white	<i>Melandrium album</i>
Eveningprimrose, common	<i>Oenothera biennis</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Gromwell	<i>Lithospermum</i> spp.
Knapweed, diffuse	<i>Centaurea diffusa</i>
Knapweed, spotted	<i>Centaurea maculosa</i>
Mallow, dwarf	<i>Malva borealis</i>
Plantain, bracted	<i>Plantago aristata</i>
Ragwort, tansy	<i>Senecio jacobaea</i>
Starthistle, yellow	<i>Centaurea solstitialis</i>
Sweetclover	<i>Melilotus</i> spp.
Teasel	<i>Dipsacus sativus</i>
Thistle, bull	<i>Cirsium vulgare</i>
Thistle, musk	<i>Carduus nutans</i>
Thistle, plumeless	<i>Carduus acanthoides</i>
Thistle, variegated (milk)	<i>Silybum marianum</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Perennials¹	
Alfalfa	<i>Medicago sativa</i>
Apple, tropical soda	<i>Solanum viarum</i>
Artichoke, Jerusalem	<i>Helianthus tuberosus</i>
Aster, spiny	<i>Aster spinosus</i>
Aster, whiteheath	<i>Aster pilosus</i>
Bedstraw, smooth	<i>Gallium mollugo</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Bindweed, hedge	<i>Calystegia sepium</i>
Blueweed, Texas	<i>Helianthus ciliaris</i>
Bursage, woollyleaf	<i>Ambrosia grayi</i>
Buttercup, tall	<i>Ranunculus acris</i>
Campion, bladder	<i>Silene vulgaris</i>
Chickweed, field	<i>Cerastium arvense</i>
Chickweed, mouseear	<i>Cerastium vulgatum</i>
Chicory	<i>Cichorium intybus</i>
Clover, hop	<i>Trifolium aureum</i>
Dandelion, common	<i>Taraxacum officinale</i>
Dock, broadleaf (Bitterdock)	<i>Rumex obtusifolius</i>
Dock, curly	<i>Rumex crispus</i>
Dogbane, hemp	<i>Apocynum cannabinum</i>
Dogfennel (Cypressweed)	<i>Eupatorium capillifolium</i>
Fern, bracken	<i>Pteridium aquilinum</i>
Garlic, wild	<i>Allium vineale</i>
Goldenrod, Canada	<i>Solidago canadensis</i>
Goldenrod, Missouri	<i>Solidago missouriensis</i>
Goldenweed, common	<i>Isocoma coronopifolia</i>
Hawkweed	<i>Hieracium</i> spp.
Henbane, black	<i>Hyoscyamus niger</i>
Horsenettle, Carolina	<i>Solanum carolinense</i>
Ironweed	<i>Vernonia</i> spp.
Knapweed, black	<i>Centaurea nigra</i>
Knapweed, Russian	<i>Centaurea repens</i>
Lespedeza, sericea	<i>Lespedeza cuneata</i>
Milkweed, climbing	<i>Sarcostemma cyanchoides</i>
Milkweed, common	<i>Asclepias syriaca</i>
Milkweed, honeyvine	<i>Ampelamus albidus</i>
Milkweed, western whorled	<i>Asclepias subverticillata</i>
Nettle, stinging	<i>Urtica dioica</i>
Nightshade, silverleaf	<i>Solanum elaeagnifolium</i>
Onion, wild	<i>Allium canadense</i>
Plantain, broadleaf	<i>Plantago major</i>
Plantain, buckhorn	<i>Plantago lanceolata</i>
Pokeweed	<i>Phytolacca americana</i>
Ragweed, western	<i>Ambrosia psilostachya</i>
Redvine	<i>Brunnichia ovata</i>
Smartweed, swamp	<i>Polygonum coccineum</i>
Snakeweed, broom	<i>Gutierrezia sarothrae</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Perennials¹ (continued)	
Sorrel, red (Sheep sorrel)	<i>Rumex acetosella</i>
Sowthistle, perennial	<i>Sonchus arvensis</i>
Spurge, leafy	<i>Euphorbia esula</i>
Sundrop	<i>Oenothera perennis</i>
Thistle, Canada	<i>Cirsium arvense</i>
Thistle, Scotch	<i>Onopordum acanthium</i>
Toadflax, Dalmatian	<i>Linaria genistifolia</i>
Trumpet creeper	<i>Campsis radicans</i>
Vetch	<i>Vicia</i> spp.
Waterhemlock, spotted	<i>Cicuta maculata</i>
Waterprimrose, creeping	<i>Ludwigia peploides</i>
Woodsorrel, creeping	<i>Oxalis corniculata</i>
Woodsorrel, yellow	<i>Oxalis stricta</i>
Wormwood, Louisiana	<i>Artemisia ludoviciana</i>
Yankee weed	<i>Eupatorium compositifolium</i>
Yarrow, common	<i>Achillea millefolium</i>
Woody Brush and Vines^{1, 2}	
Alder	<i>Alnus</i> spp.
Ash	<i>Fraxinus</i> spp.
Basswood	<i>Tilia americana</i>
Beech	<i>Fagus</i> spp.
Birch	<i>Betula</i> spp.
Cherry	<i>Prunus</i> spp.
Chinquapin	<i>Chrysolepis chrysophylla</i>
Cottonwood	<i>Populus deltoides</i>
Cucumbertree	<i>Magnolia acuminata</i>
Elm	<i>Ulmus</i> spp.
Grape	<i>Vitus</i> spp.
Hemlock	<i>Tsuga</i> spp.
Hickory	<i>Carya</i> spp.
Honeylocust	<i>Gleditsia triacanthos</i>
Honeysuckle	<i>Lonicera</i> spp.
Hornbeam	<i>Carpinus</i> spp.
Huckleberry	<i>Vaccinium arboreum</i>
Huisache	<i>Acacia farnesiana</i>
Ivy, poison	<i>Rhus radicans</i>
Kudzu	<i>Pueraria lobata</i>
Locust, black	<i>Robinia pseudoacacia</i>
Maple	<i>Acer</i> spp.
Mesquite	<i>Prosopis ruscifolia</i>
Oak	<i>Quercus</i> spp.
Oak, poison	<i>Rhus toxicodendron</i>
Olive, Russian	<i>Elaeagnus angustifolia</i>
Persimmon, eastern	<i>Diospyros virginiana</i>
Pine	<i>Pinus</i> spp.
Poplar	<i>Populus</i> spp.
Rabbitbrush	<i>Chrysothamnus pulchellus</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Woody Brush and Vines^{1,2} (continued)	
Rose, multiflora	<i>Rosa multiflorum</i>
Sassafras	<i>Sassafras albidum</i>
Serviceberry	<i>Amelanchier sanguinea</i>
Spicebush	<i>Lindera benzoin</i>
Spruce	<i>Picea</i> spp.
Sumac	<i>Rhus</i> spp.
Sycamore	<i>Platanus occidentalis</i>
Tarbrush	<i>Flourensia cernua</i>
Willow	<i>Salix</i> spp.
Witchhazel	<i>Hamamelis macrophylla</i>

¹ Suppression only.² Not for use in California.³ Except dicamba resistant.

Product Stewardship Practices

- Apply **Engenia**® herbicide to weeds 4 inches or less in size for best performance.
- Apply **Engenia** at the labeled rate.
- Use **Engenia** as part of a herbicide program that includes the use of residual herbicides and herbicides with alternate sites of action to reduce resistance selection pressure.
- Select only EPA-approved nozzles that produce **extremely coarse to ultra-coarse** spray droplets. See www.engeniatankmix.com.
- Maintain boom height 24 inches or less from target.
- Identify areas of sensitive nontarget plants and maintain proper setback distance from these areas.
- Thoroughly clean spray equipment before and after application.

Mode of Action

Dicamba, the active ingredient in **Engenia**, is a **Group 4** (WSSA) herbicide. Herbicides in this group mimic auxin (a plant hormone) resulting in a hormone imbalance in susceptible plants that interferes with normal plant growth (e.g. cell division, cell enlargement, and protein synthesis). **Engenia** is readily absorbed by leaves, roots, and shoots; translocates throughout the plant; and accumulates in areas of active growth to provide postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds.

Any weed population may contain plants naturally resistant to **Group 4** herbicides. Weeds resistant to **Group 4** herbicides may be effectively managed using herbicide(s) from a different group and/or by using cultural or mechanical practices. Report any incidence of non-performance of this product against a particular weed species at www.EngeniaQuestions.com. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant weeds. Additional information about weeds which are

known to be resistant to dicamba can be found at www.Resistance-Information.BASF.US.

Resistance Management

While weed resistance to **Group 4** herbicides is infrequent, populations of resistant biotypes are known to exist. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, proper fertilizer placement, optimum seeding rate/row spacing, and timely tillage.

To aid in the prevention of developing weeds resistant to this product, the following steps should be followed where practical:

- Start clean with tillage or an effective burndown herbicide program.
- **DO NOT** rely on a single herbicide site of action for weed control during the growing season.
- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Apply full rates of **Engenia** for the most difficult-to-control weed in the field at the specified time (correct weed size) to minimize weed escapes.
- Use of preemergence herbicides that provide soil residual control of broadleaf and grass weeds is recommended to reduce early season weed competition and allow for more timely in-crop postemergence herbicide applications.
- Avoid application of herbicides with the same site of action more than twice a season.
- Scout fields after application to detect weed escapes or shifts in weed species.
- Report any incidence of non-performance of this product against a particular weed species to your BASF retailer, representative or online at www.EngeniaQuestions.com.
- If resistance is suspected, treat weed escapes with a herbicide having a mode of action other than **Group 4** and/or use non-chemical methods to remove escapes, as is practical, with the goal of preventing further seed production.
- For more information about weeds that are known to be resistant to dicamba go to www.Resistance-Information.BASF.US.

Additionally, users should follow as many of the following herbicide resistance management practices as is practical:

- Use a broad spectrum soil-applied herbicide with other modes of action as a foundation in a weed control program.
- Utilize sequential applications of herbicides with alternative modes of action.
- Rotate the use of this product with non-**Group 4** herbicides.
- Avoid making more than two applications of **Engenia** and any other **Group 4** herbicides within a single growing season unless mixed with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

- Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Thoroughly clean plant residues from equipment before and after leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields during and after harvest to reduce weed seed production.
- Contact the local agricultural extension service, BASF representative, ag retailer or crop consultant for further guidance on weed control practices as needed.

Crop Tolerance

Crops growing under normal environmental conditions are tolerant to **Engenia® herbicide** when applied according to label directions. Crop injury may occur under stressful growing conditions (e.g. low soil fertility, seedling disease, extreme hot or cold weather, excessive moisture, high soil pH, high soil salt concentration, drought).

Application Instructions

Apply **Engenia** by ground to actively growing weeds as a band, broadcast, or spot spray application for postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds.

Make postemergence applications of **Engenia** when broadleaf weeds are small and actively growing. An adjuvant is recommended with **Engenia** for best postemergence activity; refer to **Tank Mixing Information** section and crop-specific information sections for details. Postemergence activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions, or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger broadleaf weeds, use higher spray volumes and a higher application rate within an application rate range.

Cultivation should be delayed until 7 days after applying **Engenia** or a reduction in weed control may occur.

Use extreme care when applying **Engenia** to prevent injury to desirable plants. **Engenia** may cause injury to desirable sensitive plants when contacting their roots, stems, or foliage.

Sensitive crops include, but are not limited to:

- non-DT soybeans
- cucumber and melons (EPA **Crop Group 9**)
- flowers
- fruit trees
- grapes
- ornamentals including greenhouse-grown and shade house-grown broadleaf plants
- peanuts
- peas and beans (EPA **Crop Group 6**)
- peppers, tomatoes, and other fruiting vegetables (EPA **Crop Group 8**)
- potato
- sweet potato
- tobacco

These plants are most sensitive to **Engenia** during periods of rapid vegetative growth or flowering.

Application Rates

Always read and follow crop-specific use directions.

Table 2. Application Rate to Control or Suppress Target Weed by Weed Type and Growth Stage

(See **Crop-specific Information** section for additional directions and exceptions)

Weed Type and Growth Stage	Rate/Acre ^{2,5} (fl ozs)
Annual	
Small, actively growing ¹ (less than 4-inches tall)	3.2 to 12.8
Small, actively growing (less than 4-inches tall) plus moderate residual control	12.8
Biennial	
Rosette diameter 1 to 3 inches ¹	6.4 to 12.8
Rosette diameter more than 3 inches	12.8
Perennial^{3,4}	
Top growth suppression	6.4 to 12.8
Top growth control and root suppression	12.8
Woody Brush and Vines⁴	
Top growth suppression	12.8

¹ Although rates below 12.8 fl ozs/A may provide adequate control of annual and biennial weeds, for optimum performance use listed rates or lower rates tank mixed with other herbicides that are effective on the same species and biotype.

² Use the higher rate within listed ranges when treating weeds resistant to other sites of action, dense vegetative growth, or weeds with a well-established root system. The higher rates also provide moderate residual annual weed control.

³ Refer to **Table 1** for use on perennials in California.

⁴ **Engenia** will suppress the top growth of herbaceous perennial and woody brush and vines and can be combined with other herbicides to improve control. Not for use in California.

⁵ **DO NOT** broadcast-apply more than 12.8 fl ozs/A per application. Retreatment or tank mixes may be necessary for best control of some weeds. However, sequential applications must not exceed a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year.

Application Methods and Equipment

Apply **Engenia® herbicide** by ground. Thorough spray coverage is important for best broadleaf weed control and can be improved with adjuvant, nozzle, and spray volume selection.

Calibrate application equipment for accurate target spray volume and application rate to ensure uniform distribution of spray and to avoid spray drift to nontarget areas. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the labeled use rates.

Engenia may be applied using water; consult crop-specific information sections of this label for other spray carrier options.

Ground Application

Banding Applications

When applying **Engenia** by banding, use the following formula to calculate the amount of herbicide and water volume needed:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

Broadcast Applications

Unless noted in the crop-specific information section, use a spray volume of 10 or more gallons of water per treated acre. Thorough coverage of existing vegetation is essential for postemergence applications; higher spray volumes may be necessary for optimum performance.

Wiper Applications

Engenia may be applied through wiper application equipment to control or suppress actively growing broadleaf weeds, brush, and vines. Use a 50% solution containing 1 part **Engenia** to 1 part water.

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** [0.5 lb dicamba acid equivalent (ae) per acre] per application.
- **DO NOT** contact desirable vegetation with herbicide solution. Wiper application may be made to crops (including pastures) and noncropland areas described in this label.

EXCEPTION: DO NOT use wiper application on non-dicamba-tolerant cotton or soybean.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The spray system and weather-related factors determine the potential for spray drift. The applicator is responsible for considering these factors when making application decisions to avoid spray drift onto nontarget areas.

Applicators must follow application requirements to avoid spray drift hazards, including those found in this labeling and applicable state and local regulations and ordinances. Where states have more stringent regulations, they must be observed.

All application equipment must be properly maintained and calibrated using appropriate carriers.

DO NOT allow herbicide solution to drip, physically drift, or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result. The following physical spray drift management requirements must be followed.

Controlling Droplets

Drift potential may be reduced by applying large droplets that provide sufficient coverage and control. Applying larger droplets can reduce drift potential, but will not prevent drift if the application is made improperly, or under unfavorable environmental conditions (see the **Temperature Inversions** and the **Wind Speed and Direction Requirements** sections).

- **Nozzle Type** - Use the **Turbo TeeJet® TTI11004** nozzle when applying **Engenia**. **DO NOT** use any other nozzle unless specifically allowed by label. To find a list of approved nozzles visit **www.engeniatankmix.com** no more than seven days prior to applying **Engenia**.
- **Pressure** - **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate (large orifice) nozzles instead of increasing pressure. Ensure sprayer rate controller hardware (if so equipped) does not allow pressure increases above the desired range.
- **Spray Volume** - Apply this product in a minimum of 10 gallons of spray solution per acre. Use a higher spray volume when treating dense vegetation. Higher spray volumes may also allow the use of larger nozzle orifices (sizes) which produce coarser spray droplets.
- **Equipment Ground Speed** - Select a ground speed that will deliver the desired spray volume while maintaining the desired spray pressure, but **DO NOT** exceed a ground speed of 15 miles per hour. Slower speeds generally result in better spray coverage and deposition on the target area. It is recommended that ground speed be reduced to 5 miles per hour when making applications to the edge of the treatment area.
- **Spray Boom Height** - Spray at the appropriate boom height based on nozzle selection and nozzle spacing, but **DO NOT** exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle to canopy height. Excessive boom height will increase the potential for spray drift.
- **Hooded Spray Booms** - Hooded spray booms are another tool that can be used to minimize spray drift

potential. **Engenia® herbicide** may be applied using a hooded spray boom in combination with approved nozzles; however, the applicator must ensure the configuration is compatible with equipment used.

Temperature Inversions

- **DO NOT** apply **Engenia** when temperature inversions exist at the field level.
- **Apply only during the following period:** sunrise until sunset.

Temperature inversions increase drift potential because fine droplets may remain suspended in the air longer after application. Suspended droplets can move in unpredictable directions because of the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light-to-no wind.

Inversions begin to form as the sun sets and often continue into the morning before surface warming. Their presence can be indicated by ground fog, smoke not rising, dust hanging over a road, or presence of dew or frost. Smoke that layers and moves laterally (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Inversion conditions typically dissipate with increased winds (above 3 MPH) or when surface air begins to warm (3° F from morning low).

Sensitive Areas

Engenia should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or sensitive crop plants) is minimal (e.g. when the wind is blowing away from sensitive areas).

Maintain a 110 foot buffer when applying this product from the downwind outer edges of the field, less the distance of any of the adjacent areas specified below.

To maintain the required buffer zone:

- No application swath containing **Engenia** can be initiated in, or into an area that is within the applicable buffer distance.
- The following areas may be included in the buffer distance calculation when adjacent to field edges:
 1. Roads, paved or gravel surfaces.
 2. Agricultural fields that have been prepared for planting.
 3. Planted agricultural fields containing asparagus, corn, DT cotton, DT soybeans, sorghum, proso millet, small grains and sugarcane.
 4. Areas covered by the footprint of a building, shade house, silo, feed crib, or other man made structure with walls and or roof.

Susceptible Crops: Restrictions and precautions for the protection of susceptible crops.

- **DO NOT** apply under circumstances where spray drift may occur to food, forage, or other plantings that might

be damaged or the crops thereof rendered unfit for sale, use or consumption.

- During application and sprayer clean-out **DO NOT** allow contact of herbicide with foliage, green stems, exposed non-woody roots of crops, and desirable plants.

In addition to the required 110 foot down wind spray buffer, additional protections are required for dicamba sensitive crops. **DO NOT** apply when wind is blowing in the direction of neighboring sensitive crops.

Sensitive crops include, but are not limited to:

- non-DT soybeans
- cucumber and melons (EPA Crop Group 9)
- flowers
- fruit trees
- grapes
- ornamentals including greenhouse-grown and shade house-grown broadleaf plants
- peanuts
- peas and beans (EPA Crop Group 6)
- peppers, tomatoes, and other fruiting vegetables (EPA Crop Group 8)
- potato
- sweet potato
- tobacco

Severe injury or destruction could occur if any contact between this product and these plants occurs.

Survey the area before spraying: Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants. Applicators are required to ensure that they are aware of the proximity to sensitive areas, and to avoid potential adverse effects from off-target movement of **Engenia**. Before making an application, the applicator must survey the application site for neighboring sensitive areas. The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available.

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of equipment and weather related factors must be monitored to maximize performance and on-target spray deposition. The applicator is responsible for considering all of these factors when making a spray decision. The applicator is responsible for compliance with state and local pesticide drift regulations.

Wind Speed and Direction Requirements

- **Wind Speed** - 3 to 10 mph
- **Wind Direction** - Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect drift.

Spray System Equipment Clean-out

As part of the Restricted Use Product requirements, applicators must document that they have complied with the **Spray System Equipment Clean-out** section of this label.

Ensure that the spray system used to apply **Engenia® herbicide** is clean before application. Small quantities of ammonium sulfate (AMS) can increase the volatility potential of **Engenia**.

Severe crop injury may occur if any **Engenia** remains in the spray equipment following application and is subsequently applied to sensitive crops. After using **Engenia**, clean all mixing and spray equipment (including tanks, pumps, lines, filters, screens, and nozzles) with a strong detergent based sprayer cleaner. Dispose of rinsate in compliance with local, state, and federal guidelines.

1. After spraying, drain the sprayer (including boom and lines). Avoid allowing the spray solution to remain in the spray boom lines overnight or for extended periods of time.
2. Flush tank, hoses, boom, and nozzles with clean water. Open boom ends and flush if so equipped.
3. Inspect and clean all strainers, screens, and filters.
4. Use commercial sprayer cleaner containing strong detergents according to the manufacturer's directions.
5. Wash all parts of the tank, including the inside top surface. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
6. Flush hoses, spray lines, and nozzles with the cleaning solution for at least 1 minute. Remove nozzles, screens, and strainers, and clean separately in the cleaning solution after completing the above procedure.
7. Drain pump, filter, and lines.
8. Rinse the complete spraying system with clean water.
9. Clean and rinse the exterior of the sprayer.
10. Appropriately dispose of all rinsate in compliance with local, state, and federal requirements.

Tank Mixing Information

Engenia may only be tank-mixed with products that have been tested and found by the EPA not to have an unreasonable adverse effect on the spray drift properties of **Engenia**. A list of those EPA approved products may be found at www.engeniatankmix.com. **DO NOT** tank mix any product with **Engenia** unless:

1. You check the list of EPA approved products for use with **Engenia** at www.engeniatankmix.com no more than 7 days before applying **Engenia**; and
2. The intended product tank-mix with **Engenia** is identified on that list of tested and approved products; and
3. The intended product to be tank-mixed with **Engenia** is not prohibited on this label.

4. Additional Warnings and Restrictions:

- Some COC, HSOC and MSO adjuvants may cause a temporary crop response.
- **DO NOT** tank mix products containing ammonium salts such as ammonium sulfate and urea ammonium nitrate.
- **DO NOT** add adjuvants that will further decrease pH or acidify the spray solution.
- Hard water does not usually affect the activity of **Engenia**; however, other tank mix components may be adversely affected (e.g. glyphosate). Use of an approved conditioning agent should be considered when hard water (i.e. total calcium, magnesium, and iron content above 500 ppm) is used as a spray carrier.
- Use of an approved neutral buffering agent may be warranted if the water source or tank mix components will create an acidic spray solution less than pH 5.
- Drift reduction agents listed on the website above can minimize the percentage of driftable fines. However, the applicator must check with the DRA manufacturer to determine if the approved DRA will work effectively with the spray nozzle, the spray pressure, and the desired spray solution.

For an up to date and complete list of approved tank mix options with **Engenia**, visit www.engeniatankmix.com.

Refer to the tank mix product labels to confirm that the respective tank mix products are registered for the specific crop use; follow required crop rotation restrictions. Read and follow the applicable restrictions and limitations and **Directions For Use** on all product labels involved in tank mixing. Always follow the most restrictive label use directions; refer to crop-specific information section for details.

Mixing **Engenia** with postemergence grass (graminicide) herbicides may reduce the effectiveness of those products. Follow graminicide label when mixing with **Engenia** to ensure optimum weed control. Physical incompatibility, reduced weed control, or crop injury may result from mixing **Engenia** with other pesticides, additives, nutritionals, etc.

Adjuvants. BASF recommends the use of quality adjuvants with **Engenia** such as **Astonish™**, **Class Act®**, **Ridion®**, **Grounded®**, **Iconic®**, **Jackhammer™ Elite**, **R-11®**, **Strike Force®**, and **Verifact**.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the following **Mixing Order** instructions using 2 teaspoons for each pound or 1 teaspoon for each pint of labeled use rate per acre.
3. Cap the jar and invert 10 cycles between component additions.

4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface; fine particles that precipitate to the bottom; or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Make sure each component is thoroughly mixed and suspended before adding tank mix partners. Except when mixing products in PVA bags, maintain constant agitation during mixing and application.

1. **Water** - Begin by agitating a thoroughly clean sprayer tank 1/2 to 3/4 full of clean water.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives**
5. **Water-dispersible products** (such as dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products and additives (Engenia® herbicide)**
7. **Emulsifiable concentrates** (including NIS and oil concentrate)
8. Remaining quantity of water

Maintain continuous and constant agitation throughout mixing and application until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

Use Precautions

- **Maximum Seasonal Use Rate** - Refer to crop-specific information sections for maximum seasonal application rates for each crop or use pattern.
- **Stress** - Application to crops under stress because of lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures may result in crop injury.

Use Restrictions

Applicator MUST ALSO follow restrictions under Crop-specific Information section(s).

- **DO NOT** apply this product aerially.
- **DO NOT** apply **Engenia** with ammonium-containing additives, conditioners, or fertilizers (e.g. AMS, UAN).
- **DO NOT** apply **Engenia** if rain is expected within four (4) hours after application.
- Apply **Engenia** at wind speeds between 3 and 10 mph.
- Apply **Engenia** only during the following period: sunrise until sunset.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **DO NOT** apply **Engenia** through any type of irrigation system (e.g. chemigation).
- **DO NOT** tank mix **Engenia** with **Lorsban® insecticide**.

Crop Rotation Restrictions

Use the following information to determine the required interval between **Engenia** application and rotational crop planting as well as replanting after crop failure because of environmental factors such as drought, frost, or hail. Determine the rotational crop interval for tank mix products and use the most restrictive interval of all products applied.

Table 3. Crop Rotation Restrictions by Application Rate

Crop	Engenia® herbicide (fl ozs/A)		
	≤ 6.4	9.6	12.8
	Rotational Crop Interval ¹ (days after application)		
Corn	0	0	0
Cotton, non-DT ²	21 [†]	28	42
Cotton, DT	0	0	0
Sorghum	14	21	28
Soybean, non-DT ²	14	21	28
Soybean, DT	0	0	0
Grasses ³ 30 inches or more annual precipitation	14	21	28
Grasses ³ less than 30-inches annual precipitation	21	28	42
All other crops	120	120	120
[†] DO NOT include time when the soil is frozen and days before receiving any required rainfall or overhead irrigation. ² Following application of Engenia and a minimum accumulation of 1 inch of rainfall or overhead irrigation, observe the indicated waiting interval. ³ Includes barley, oats, wheat, and other grass crops. Small grains may be planted with no waiting interval following Engenia applied at 3.2 fl ozs/A. ¹ Missouri and Tennessee Only. Following application of Engenia , wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of 14 days per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.			

Crop-specific Information—Dicamba-tolerant (DT) Crops

The following directions are specific for **Engenia®** herbicide use in DT cotton and DT soybeans.

Depending on specific crop application directions, **Engenia** may be applied for postemergence control of emerged broadleaf weeds and/or residual control of germinating broadleaf weed seeds before crop planting (preplant and/or preseed) and after planting (preemergence, postemergence). Refer to **Table 1** for list of weeds controlled or suppressed.

Engenia may be applied preplant, at-planting, preemergence, and postemergence (in-crop) for weed control in DT cotton and DT soybeans.

Engenia is EPA approved for use in DT crops in the following states, subject to county restrictions as noted: Alabama, Arizona, Arkansas, Colorado, Delaware, Florida (excluding Palm Beach County), Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee (excluding Wilson County), Texas, Virginia, West Virginia, Wisconsin.

Dicamba-tolerant (DT) Cotton

Engenia may be applied preplant surface, preemergence, or postemergence (over the top) to control or suppress many annual, biennial, and perennial broadleaf weeds (see **Table 1**) in dicamba-tolerant (DT) cotton. If **Engenia** is applied to non-dicamba-tolerant cotton other than as directed, severe crop injury will result. For non-dicamba-tolerant cotton information, see **Cotton** section in **Crop-specific Information** section.

Application Rates and Timings

Maximum Application Rates in DT Cotton

Application Timing	Amount (fl ozs/A)
Single Preplant Preemergence Postemergence	12.8 (0.5 lb dicamba ae/A)
All Applications Combined Total per Season	51.2 (2 lbs dicamba ae/A)
Total Preplant and Preemergence	25.6 (1 lb dicamba ae/A)
Total Postemergence	51.2 (2 lbs dicamba ae/A)

Application of **Engenia** plus specified adjuvants (refer to **Tank Mixing Information** section for details) may be made before and after cotton emergence. Separate sequential applications by 7 days or more. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Timely application will improve control and reduce weed competition. Apply preplant, preemergence, and postemergence to DT cotton only by ground. **DO NOT** apply more than 51.2 fl ozs/A of **Engenia** per year (single growing season).

Preplant and Preemergence Applications

Engenia can be applied at 12.8 fl ozs/A before, during, or after planting DT cotton. **Engenia** will provide burndown of emerged weeds. Apply as a sequential application with other preemergence herbicides to control emerged grass weeds and other broadleaf weeds, and with a preemergence residual herbicide to control germinating weed seeds. Early season weed control is critical for minimizing weed competition and protecting crop yield potential.

Postemergence Applications

Apply **Engenia** postemergence at 12.8 fl ozs/A from cotton emergence up to 7 days before harvest. **DO NOT** apply more than 12.8 fl ozs/A in a single postemergence over-the-top application of **Engenia**.

For best weed control, **Engenia** applications should be made early in the season to small (less than 4-inches tall), actively growing weeds. Sequential postemergence applications may be necessary to control new weed flushes. Allow at least 7 days between applications. Avoid application of **Engenia** more than twice in a season to reduce resistance-selection pressure. Apply **Engenia** in a herbicide program that includes sequential application of herbicides with a different mechanism of action to control new weed regrowth.

Postemergence applications of **Engenia** mixed with some adjuvants may cause injury to DT cotton (see **Tank Mixing Information** section for details). Injury symptoms usually appear as necrotic spots on leaves. Potential for injury may be reduced when applications are made with spray volumes of at least 15 GPA and lower adjuvant rates. Symptomology is temporary with cotton recovering quickly after application.

Apply **Engenia** preplant, preemergence, and postemergence over the top by ground only.

Harvest Aid Applications

Engenia may be used for harvest aid in DT cotton. Apply **Engenia** as a broadcast spray by ground only. Applications must adhere to ground application requirements in this label; see the **Application Methods and Equipment** section. Apply **Engenia** at least 7 days before harvest.

Use with Other Herbicides

Broad-spectrum control of grass weeds or additional broadleaf weeds may require a sequential herbicide application. **Engenia® herbicide** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Outlook® herbicide**
- **Prowl® H2O herbicide**
- glyphosate (e.g. **Roundup® herbicide**)

For approved tank mix options see www.engeniatankmix.com.

DT Cotton Restrictions

- **DO NOT** apply **Engenia** to non-dicamba-tolerant cotton varieties other than as directed or severe cotton injury will occur; refer to **Cotton** section in **Crop-specific Information** section.
- **DO NOT** apply harvest aid application of **Engenia** within 7 days of harvest.
- Use caution when tank mixing **Engenia** with approved emulsifiable concentrates (EC) or oil-based products that may increase the potential for crop injury.

Dicamba-tolerant (DT) Soybean

Engenia may be applied preplant surface, preemergence, or postemergence (over the top) to control or suppress many annual, biennial, and perennial broadleaf weeds (see **Table 1**) in dicamba-tolerant (DT) soybean. If **Engenia** is applied to non-dicamba-tolerant soybean other than as directed, severe crop injury will result. For non-dicamba-tolerant soybean information, see **Soybean** section in **Crop-specific Information** section.

Application Rates and Timings

Maximum Application Rates in DT Soybean

Application Timing	Amount (fl ozs/A)
Single Preplant Preemergence Postemergence	12.8 (0.5 lb dicamba ae/A)
All Applications Combined Total per Season	51.2 (2 lbs dicamba ae/A)
Total Preplant and Preemergence	25.6 (1 lb dicamba ae/A)
Total Postemergence	25.6 (1 lb dicamba ae/A)

Application of **Engenia** plus specified adjuvants (refer to **Tank Mixing Information** section for details) may be made before and after soybean emergence. Separate sequential applications by 7 days or more. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Timely application will improve control and reduce weed competition. Apply preplant, preemergence, and postemergence to DT soybean only by ground.

Preplant and Preemergence Applications

Engenia can be applied at 12.8 fl ozs/A before, during, or after planting dicamba-tolerant soybean. **Engenia** will provide burndown of emerged weeds and moderate residual activity. Apply as a sequential application with other labeled herbicides to control emerged grass weeds and other broadleaf weeds, and with a preemergence residual herbicide to control germinating weed seeds. Early season weed control is critical for minimizing weed competition and protecting crop yield potential.

Postemergence Applications

Up to two postemergence applications using 12.8 fl ozs/A of **Engenia** per application may be made from soybean emergence up to and including beginning bloom (R1 growth stage of soybeans). Allow at least 7 days between applications. However, **DO NOT** apply more than a maximum cumulative total of 25.6 fl ozs/A of **Engenia** postemergence.

Engenia applications should be made to small (less than 4-inches tall), actively growing weeds. Sequential postemergence applications may be necessary to control new weed flushes. For best results, apply **Engenia** in a herbicide program that includes sequential application of herbicides with a different mechanism of action to control new weed growth.

Postemergence applications of **Engenia** may cause dicamba-tolerant soybeans to wilt or droop shortly after application. Symptomology is transient, and soybeans recover quickly after application.

Use with Other Herbicides

Broad-spectrum control of grass weeds or additional broadleaf weeds may require a sequential herbicide application. **Engenia® herbicide** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Optill®** powered by Kixor® herbicide
- **Outlook®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Raptor®** herbicide
- **Sharpen®** powered by Kixor® herbicide
- **Varisto®** herbicide
- **Verdict®** powered by Kixor® herbicide
- **Zidua®** herbicide
- **Zidua® PRO** powered by Kixor® herbicide
- cloethodim (e.g. **Select Max®** herbicide)
- glyphosate (e.g. **Roundup®** herbicide)

For approved tank mix options see
www.engeniatankmix.com.

DT Soybean Restrictions

- **DO NOT** apply **Engenia** to non-dicamba-tolerant soybean varieties other than as directed or severe soybean injury will occur; refer to **Soybean** section in **Crop-specific Information** section.
- **DO NOT** apply **Engenia** to soybeans after first bloom (R1).
- Use caution when tank mixing **Engenia** with approved emulsifiable concentrates (EC) or oil-based products that may increase the potential for crop injury.
- Allow at least 7 days between final application and harvest or feeding of soybean forage.
- Allow at least 14 days between final application and harvest or feeding of soybean hay.

Crop-specific Information—Conventional (non-Dicamba-tolerant) Crops

This section provides use directions for **Engenia® herbicide** in conventional (non-DT) crops. Read product information, application instructions, weeds controlled, and additive instructions in preceding sections of the label.

Depending on specific crop application directions, **Engenia** may be applied for postemergence control of emerged broadleaf weeds and/or residual control of germinating broadleaf weed seeds before crop planting (preplant and/or preseed) and after planting (preemergence, postemergence). Refer to **Table 1** for list of weeds controlled or suppressed.

Asparagus

Engenia may be applied immediately after cutting asparagus but at least 24 hours before the next cutting. Apply 6.4 to 12.8 fl ozs/A of **Engenia** in 40 to 60 gallons of diluted spray to emerged and actively growing weeds. Apply 12.8 fl ozs/A of **Engenia** to control common chickweed, field bindweed, nettleleaf goosefoot, and wild radish. To improve control of Canada thistle and field bindweed, apply **Engenia** in combination with glyphosate (e.g. **Roundup® herbicide**) or sequentially with 2,4-D.

If spray contacts emerged spears, crooking (twisting) of some spears may result. If crooking occurs, discard affected spears.

Asparagus Restrictions

- **DO NOT** apply more than a total of 12.8 fl ozs/A of **Engenia** (0.5 pound dicamba ae/A) per year in asparagus.
- **DO NOT** harvest for 24 hours after treatment.
- **DO NOT** use in the Coachella Valley of California.

Between Crop Application

Engenia may be used as a burndown treatment to control broadleaf weeds at any time of the year during the fallow period following crop harvest and before the following crop is planted. Apply **Engenia** as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost, or in fallow cropland or crop stubble the following spring or summer.

Application Rates and Timings

Apply **Engenia** as a broadcast or spot treatment at 3.2 to 12.8 fl ozs/A plus specified adjuvants; see **Tank Mixing Information** section for details. Refer to **Table 2** to determine use rates for specific targeted weed species. For best performance, apply **Engenia** when annual weeds are less than 4-inches tall, when biennial weeds are in the rosette stage, and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. For the most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke, apply **Engenia** when the majority of weeds have at least 4 inches of

regrowth, or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts, such as rhizomes or bulblets, after the effective period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted. For small grain in-crop uses of **Engenia**, refer to **Small Grain** section for details.

Specific crop rotation intervals must be observed between an application of **Engenia** and planting the following crop; see **Crop Rotation Restrictions** in **Use Restrictions** section.

Use with Other Herbicides

Broad-spectrum burndown control of grass weeds and/or additional broadleaf weeds requires another herbicide.

Engenia may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Distinct® herbicide**
- **Facet® L herbicide**
- **Outlook® herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- 2,4-D
- glyphosate (e.g. **Roundup**)

For approved tank mix options see www.engeniatankmix.com.

Between Crop Application Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia** as a between crop application.
- **DO NOT** apply more than a maximum cumulative total of 2 pounds dicamba ae/A from all product sources per cropping season.

Conservation Reserve Program (CRP)

Engenia may be used on both newly seeded and established grasses grown in the Conservation Reserve or federal Set-Aside Programs. Treatment with **Engenia** will injure or may kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Application Rates and Timings

Engenia may be applied at 3.2 to 12.8 fl ozs/A; refer to **Table 2** for rates based on target weed type and growth stage.

Newly Seeded Areas

Engenia may be applied either preplant or postemergence to newly seeded grasses or small grain such as barley, oats, rye, sudangrass, wheat, or other grain species grown

Crop-specific Information—Conventional (non-Dicamba-tolerant) Crops *(continued)*

as a cover crop. Postemergence application may be made after seedling grasses exceed the 3-leaf stage.

Preplant Intervals. Preplant applications at 12.8 fl ozs/A may injure new seedlings if the interval between application and grass planting is less than:

- 20 days - 30 inches or more annual precipitation
- 45 days - less than 30-inches annual precipitation

Established Grass Stands

Established grass stands are perennial grasses planted one or more seasons before treatment. Certain species (bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome) may show a response when treated with **Engenia® herbicide**.

Use with Other Herbicides

Broad-spectrum control of broadleaf and grass weeds requires another herbicide. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet® L herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)
- paraquat (e.g. **Gramoxone® SL herbicide**)

For approved tank mix options see www.engeniatankmix.com.

CRP Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** per application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.

- **Engenia** may injure newly seeded grasses and certain species, such as bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome.

Corn (field, seed, silage) and Popcorn

Engenia may be applied preplant surface, preemergence, or postemergence to corn. Corn in this label refers to conventional or herbicide-tolerant field corn (grown for grain, seed, or silage) and popcorn. Before applying **Engenia** to seed corn or popcorn, verify with your local seed company (supplier) the selectivity of **Engenia** on your inbred line or hybrid to help avoid potential injury to sensitive inbreds or hybrids.

Engenia is not registered for use on sweet corn.

Direct contact of **Engenia** with corn seed must be avoided. If corn seeds are less than 1.5 inches below the soil surface, delay application until corn has emerged.

Postemergence applications of **Engenia** to corn during periods of rapid growth may result in temporary leaning. Corn will usually become erect within 3 to 7 days. To avoid breakage, delay cultivation until after corn is growing normally.

Application Rate

Engenia application rates vary by soil texture, organic matter, and application timing. Refer to **Table 4** for **Engenia** application rates by application timing. Up to 2 applications of **Engenia** may be made during a growing season. Sequential applications must be separated by 2 weeks or more.

Table 4. Engenia Application Rates for Corn

Soil Texture	Organic Matter	Application Rate (fl ozs/A)			
		Preplant/ Preemergence ²	Preemergence	Postemergence	
		No Tillage	Conventional/ Reduced Tillage	Early ³	Late ⁴
Coarse ¹	All	6.4	NA	6.4	6.4
Medium/Fine	2.5% or less	6.4	NA	12.8	6.4
Medium/Fine	more than 2.5%	12.8	12.8	12.8	6.4

¹ Coarse soil types include sand, loamy sand, or sandy loam.

² Use only preemergence applications in conventional and reduced tillage systems.

³ Apply between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Use crop oil concentrate only in dry conditions when corn is less than 5-inches tall and when applying **Engenia** alone or tank mixed with atrazine.

⁴ Apply in corn that is 8-inches to 36-inches tall or up to 15 days before tassel emergence, whichever comes first.

NA - not applicable

Application Timing

Preplant (up to 14 days before planting) and Preemergence Applications in No Tillage Corn

Engenia® herbicide can be applied to emerged weeds before, during, or after planting a corn crop. When planting into a legume sod (e.g. alfalfa or clover), apply **Engenia** after 4 inches of regrowth. For application rates, refer to **Table 4**.

Preemergence Applications in Conventional or Reduced Tillage Corn

Engenia may be applied after planting and before corn emergence; refer to **Table 4** for application rates. Preemergence application of **Engenia** does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if the application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g. drags, harrows) that concentrates treated soil over seed furrow or seed damage could result.

Postemergence Applications (all tillage systems)

Apply early postemergence treatment between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Apply later applications when corn is 8-inches to 36-inches tall, or up to 15 days before tassel emergence, whichever comes first. Apply as a directed spray when corn leaves prevent proper spray coverage. Application rates vary by application timing; refer to **Table 4** for specific postemergence application rates.

Use with Other Herbicides

Engenia may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Armezon® herbicide**
- **Armezon® PRO herbicide**
- **Outlook® herbicide**
- **Prowl® H2O herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- **Zidua® herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

For approved tank mix options see www.engeniatankmix.com.

NOTE: Refer to tank mix product labels to confirm the respective tank mix products are registered for use on specific corn types. Not all corn products are registered on popcorn and seed corn.

Corn and Popcorn Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia**.

- **DO NOT** apply more than a maximum cumulative total of 1.5 pounds dicamba ae/A from all product sources per cropping season.

- Corn or popcorn forage and silage may be harvested, fed, or grazed when the crop has reached the ensilage (milk) stage or later in maturity.

- **Engenia is not registered for use on sweet corn.**

Cotton

Before planting cotton, **Engenia** may be used early preplant for burndown of actively growing broadleaf weeds; refer to **Table 1** for weeds controlled or suppressed.

Application Rates and Timings

Apply **Engenia** as a broadcast spray up to 6.4 fl ozs/A plus specified adjuvants; refer to **Tank Mixing Information** section for details. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across.

Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of 21 days per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Missouri and Tennessee Only. Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of **14 days** per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Use with Other Herbicides

Broad-spectrum postemergence control of grass weeds or additional broadleaf weeds requires another herbicide such as glyphosate. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Sharpen**
- glyphosate (e.g. **Roundup**)

For approved tank mix options see www.engeniatankmix.com.

Cotton Restrictions

- **DO NOT** apply more than 6.4 fl ozs/A (0.25 pound dicamba ae/A) of **Engenia® herbicide** per year (single growing season).
- **DO NOT** apply preplant to cotton west of Interstate 25.
- **DO NOT** make **Engenia** preplant application to cotton in geographic areas with average annual rainfall less than 25 inches.
- **DO NOT** apply more than 2 pounds dicamba acid equivalent per acre for the combination of treatments if applying a spring preplant treatment following application of a fall preplant (postharvest) treatment.
- Cotton gin byproducts may be fed to livestock.

Grass Grown for Seed

Engenia may be used to control annual and perennial broadleaf weeds after weed emergence. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Apply **Engenia** at 6.4 to 12.8 fl ozs/A plus specified adjuvants to seedling grasses after the crop reaches 3-leaf to 5-leaf stage; see **Tank Mixing Information** section for details. Apply up to 12.8 fl ozs/A of **Engenia** on well-established perennial grasses. Use the higher rate of the listed rate range when treating more mature weeds or dense vegetative growth.

Use with Other Herbicides

Engenia may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet® L herbicide**
- **Prowl® H2O herbicide**

For approved tank mix options see www.engeniatankmix.com.

Grass Grown for Seed Restrictions

- **DO NOT** apply **Engenia** after grass seed crop begins to joint.
- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per application or a cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.
- Refer to **Table 5** for grazing restrictions.

Pasture, Hay, Rangeland, and Farmstead (noncropland)

Engenia may be used on pasture, hay, rangeland, and farmstead including fencerows and nonirrigation ditch-banks for control or suppression of broadleaf weed and woody brush and vine species listed in **Table 1**. **Engenia** uses described in this section also refer to small grain grown for forage pasture use (rye, sorghum, sudangrass, or wheat). Grazing and harvest intervals are shown in **Table 5**.

Engenia may also be applied to noncropland areas to control broadleaf weeds in noxious weed control programs, districts, or areas including broadcast or spot treatment of roadsides, highways, utilities, railroad, and pipeline rights-of-way. Noxious weeds must be recognized at the state level, but programs may be administered at state, county, or other level.

Application Rates and Timings

Refer to **Table 2** for rate selection based on targeted weed or brush species. Some weed species will require a tank mix partner for adequate control. Retreatments may be applied as needed.

For approved tank mix options see www.engeniatankmix.com.

DO NOT apply more than 25.6 fl ozs/A of **Engenia** during a growing season.

DO NOT apply more than 12.8 fl ozs/A of **Engenia** during a growing season on small grain grown for pasture and newly seeded areas.

Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response. Usually, colonial bentgrasses are more tolerant than creeping types. Velvetgrasses are most easily injured. Treatments will injure or kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Spray volume may range from 10 to 600 gallons per acre. The volume of spray applied depends on the height, density, and type of weeds or brush being treated and on the type of equipment used. **Engenia** may be applied as a spot treatment to individual clumps or small areas of undesirable vegetation using a handgun or similar type of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

Table 5. Grazing and Haying Restrictions for Lactating Dairy Animals after Engenia® herbicide Treatment

Engenia Rate (fl ozs/A)	Days before Grazing	Days before Hay Harvest
Up to 12.8	7	37

Cut-surface Treatment

Engenia may be applied as a cut-surface treatment for control of unwanted trees and prevention of sprouts of cut trees. Mix 1 part **Engenia** with 1 to 3 parts water to create the application solution. Use the lower dilution rate when treating difficult-to-control species.

- **Frill or Girdle Treatment** - Using an axe to girdle tree trunk, make a continuous cut or a series of overlapping cuts. Spray or paint the cut surface with the solution.
- **Stump Treatment** - Spray or paint freshly cut surface with the water mix. Thoroughly wet the area adjacent to the bark.

Dormant Multiflora Rose Applications

Engenia can be applied as an undiluted spot treatment directly to the soil or as a Lo-Oil basal bark treatment using an oil-in-water emulsion solution when plants are dormant.

Spot Treatment Applications

Spot treatment application of **Engenia** should be applied directly to the soil as close as possible to the root crown within 6 inches to 8 inches of the crown. On sloping terrain, apply **Engenia** to the uphill side of the crown. **DO NOT** apply when snow or water prevents applying **Engenia** directly to the soil. The use rate of **Engenia** depends on the canopy diameter of the multiflora rose.

Example Engenia use rates:

- 0.25 fl oz per 5-foot canopy diameter
- 1.0 fl oz per 10-foot canopy diameter
- 2.35 fl ozs per 15-foot canopy diameter

Lo-Oil Basal Bark Treatment

For Lo-Oil basal bark treatments, apply **Engenia** to the basal stem region from the ground line to a height of 12 inches to 18 inches. Spray until runoff, with special emphasis on covering the root crown. For best results, apply **Engenia** when plants are dormant.

- **DO NOT** apply after bud break or when plants are showing signs of active growth.
- **DO NOT** apply when snow or water prevents applying **Engenia** to the ground line.

Lo-Oil Spray Solution Preparation

1. Combine 1.5 gallons of water, 1 oz of emulsifier, 12.8 fl ozs of **Engenia**, and 2.5 pints of No. 2 diesel fuel.

2. Adjust the amounts of materials used proportionately to the amount of final spray solution desired.

DO NOT apply more than 8 gallons/A of Lo-Oil spray solution mix per year.

Use with Other Herbicides

Broad-spectrum control of broadleaf and grass weeds requires another herbicide. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

• Frequency® herbicide

For approved tank mix options see www.engeniatankmix.com.

Pasture, Hay, Rangeland, and Farmstead (noncropland) Restrictions

- **DO NOT** apply more than a maximum cumulative total of 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) during a growing season.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) to small grain grown for pasture and to newly seeded areas.

Proso Millet

For use only within Colorado, Nebraska, North Dakota, South Dakota, and Wyoming

Apply **Engenia** and 2,4-D sequentially to provide control or suppression of annual broadleaf weeds; see **Table 1**.

Apply 3.2 fl ozs/A of **Engenia** with 0.375 lb acid equivalent of 2,4-D per acre. Apply as a broadcast or spot treatment to emerged and actively growing weeds and when proso millet is in the 2-leaf to 5-leaf stage. Use directions for 2,4-D products vary with manufacturers; refer to a 2,4-D product with labeling consistent with the crop-stage timing for **Engenia**. Some types of proso millet may be affected adversely by a sequential application of **Engenia** and 2,4-D.

Proso Millet Restrictions

- **DO NOT** apply unless possible proso millet crop injury will be acceptable.
- **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) per season in proso millet.
- Refer to **Table 5** for grazing restrictions.

Small Grain (barley, oats, triticale, and wheat)

Engenia may be applied before, during, or after planting small grain (barley, oats, triticale, and wheat). Refer to **Application Rates and Timings** for specific small grain

crop uses. For best performance, apply **Engenia® herbicide** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Applying **Engenia** to small grain during periods of rapid growth may result in crop leaning; this condition is temporary and will not reduce crop yield.

Restrictions for small grain areas grazed or cut for hay are indicated in **Table 5** in **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section of this label.

Application Rates and Timings

Early Season Applications

Table 6. Early Season Application Rate and Growth Stage in Small Grain¹

Crop	Fall-seeded		Spring-seeded	
	Rate (fl ozs/A)	Growth Stage	Rate (fl ozs/A)	Growth Stage (up to)
Barley²,³	1.6 to 3.2	before joint	1.6 to 2.4	4-leaf
Oats³			1.6 to 3.2	5-leaf
Triticale			1.6 to 3.2	6-leaf
Wheat⁴			1.6 to 3.2	6-leaf

¹ An adjuvant system should be used with all **Engenia** applications; refer to **Tank Mixing Information** section for details. **DO NOT** use oil concentrates for postemergence in-crop application.

² For spring barley varieties seeded during winter months or later, follow the rate and timing given for spring-seeded barley.

³ **DO NOT** tank mix **Engenia** with 2,4-D in oats or early season application on spring-seeded barley.

⁴ Early developing wheat varieties must receive application between early tillering and the joint stage; ensure that the application occurs before the jointing stage.

Fall-seeded Wheat ONLY

Western Oregon. When applied in the spring, **Engenia** may be used at rates up to 4.8 fl ozs/A on fall-seeded wheat. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury.

Colorado, Kansas, New Mexico, Oklahoma, and Texas. For suppression of perennial weeds (such as field bindweed), up to 6.4 fl ozs/A of **Engenia** may be applied on fall-seeded wheat after wheat exceeds the 3-leaf stage. Application may be made in the fall following a frost but before a killing freeze. **Engenia** at 6.4 fl ozs/A may be sequentially applied with MCPA after wheat begins to tiller. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, **DO NOT** apply **Engenia** if the potential for crop injury is unacceptable.

Preharvest Applications

To control broadleaf weeds that interfere with harvest, **Engenia** may be applied before harvest when barley or wheat is in the hard dough stage and the green color is

gone from the nodes (joints) of the stem. Best results will be obtained if the application can be made when weeds are actively growing but before weeds canopy.

Engenia applications may be made to fall-planted and spring-planted barley and wheat at 6.4 fl ozs/A as a broadcast application or spot treatment. A preharvest interval (PHI) of 7 days is required before crop harvest.

Use with Other Herbicides

Broad-spectrum control of broadleaf and grass weeds requires another herbicide. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Beyond® herbicide** (for **Clearfield®** wheat and **Clearfield® Plus** wheat only)
- **Clearmax® herbicide** (for **Clearfield** wheat and **Clearfield Plus** wheat only)
- **Sharpen® powered by Kixor® herbicide**
- **Zidua® herbicide**
- 2,4-D amine
- MCPA
- sulfonylurea-based herbicide (e.g. **Ally® herbicide**, **Express® herbicide**, **Finesse® herbicide**)

For approved tank mix options see www.engeniatankmix.com.

Small Grain Restrictions

- **Maximum use rate per application**
 - 3.2 fl ozs/A: Oats and triticale
 - 6.4 fl ozs/A: Spring-seeded barley, fall-seeded barley, wheat
- **Maximum seasonal use rate**
 - 3.2 fl ozs/A: Oats and triticale
 - 8.8 fl ozs/A: Spring-seeded barley
 - 9.6 fl ozs/A: Fall-seeded barley
 - 12.8 fl ozs/A: Wheat
- **DO NOT** apply **Engenia** preharvest to oats or triticale.
- **DO NOT** use oil concentrate for postemergence in-crop application.
- **DO NOT** use preharvest-treated barley or wheat for seed unless a germination test with an acceptable result of 95% germination or more is performed on the seed.
- **DO NOT** graze small grain (barley, oats, triticale, wheat) within 7 days after treatment.
- **DO NOT** harvest for hay within 37 days after treatment.
- Barley and wheat may be harvested 7 days or more after a preharvest application.
- **DO NOT** make preharvest application in California.

Sorghum

Engenia® herbicide may be used early preplant, postemergence, and preharvest in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

A preplant application of **Engenia** up to 6.4 fl ozs/A may be applied at least 14 days before sorghum planting.

Postemergence Applications

Up to 6.4 fl ozs/A of **Engenia** plus specified adjuvants (refer to **Tank Mixing Information** section for details) may be applied after sorghum is in the spike stage (all sorghum emerged) but before sorghum is 15-inches tall. For best performance, apply **Engenia** when sorghum crop is in the 3-leaf to 5-leaf stage and weeds are small (less than 3-inches tall). Use drop nozzles if sorghum is taller than 8 inches. Keep spray off sorghum leaves and out of the whorl to reduce the likelihood of crop injury and to improve spray coverage of weed foliage.

Applying **Engenia** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10 to 14 days.

Preharvest Applications

Oklahoma and Texas ONLY

Up to 6.4 fl ozs/A of **Engenia** may be applied for weed suppression any time after sorghum has reached the soft-dough stage. An agriculturally approved surfactant may be used to improve performance; see **Tank Mixing Information** section for details. Delay harvest until 30 days after a preharvest treatment.

Split Applications

Engenia may be applied in split applications: preplant followed by postemergence or preharvest; or postemergence followed by preharvest. **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** per application, or a maximum cumulative total of 12.8 fl ozs/A of **Engenia** per year.

Use with Other Herbicides

Engenia may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Basagran® 5L herbicide**
- **Facet® L herbicide**
- **Outlook® herbicide** - (Preplant only)
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

For approved tank mix options see
www.engeniatankmix.com.

Sorghum Restrictions

- **DO NOT** graze or feed treated sorghum forage or silage before mature grain stage. If sorghum is grown for pasture or hay, refer to **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section for specific grazing and feeding restrictions.
- **DO NOT** apply **Engenia** to sorghum grown for seed production.
- **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** (0.25 lb dicamba ae/A) per application.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per season.
- **Oklahoma and Texas only** - Delay harvest until 30 days after a preharvest treatment.

Soybean

Engenia may be used preplant or preharvest in soybean to control many annual broadleaf weeds and to reduce competition from established biennial and perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

Apply **Engenia** as a broadcast spray at 3.2 to 12.8 fl ozs/A plus specified adjuvants; refer to **Tank Mixing Information** section for details.

Preplant Intervals. Following application of **Engenia** and a minimum accumulation of 1 inch of rainfall or overhead irrigation, preplant waiting intervals are required before planting soybeans or crop injury may occur:

- **14 days** for 3.2 to 6.4 fl ozs/A
- **28 days** for 6.5 to 12.8 fl ozs/A

Preharvest Applications

Apply **Engenia** as a broadcast spray or spot spray at 6.4 to 12.8 fl ozs/A plus specified adjuvants; refer to **Tank Mixing Information** section for details. Applications should be made to emerged and actively growing weeds after soybean pods have reached mature brown color and at least 75% leaf drop has occurred.

Treatments may not kill weeds that later develop from seed or underground parts, such as rhizomes or bulblets, after the effective residual period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted.

Use with Other Herbicides

Engenia® herbicide may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Optill®** powered by Kixor® herbicide
- **Outlook®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Raptor®** herbicide
- **Sharpen®** powered by Kixor® herbicide
- **Verdict®** powered by Kixor® herbicide
- **Zidua®** herbicide
- **Zidua® PRO** powered by Kixor® herbicide
- glyphosate (e.g. **Roundup®** herbicide)

For approved tank mix options see www.engeniatankmix.com.

Soybean Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) in a spring application before soybean planting.
- **DO NOT** make **Engenia** preplant application to soybeans in geographic areas with average annual rainfall less than 25 inches.
- **DO NOT** apply more than 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year (single growing season).
- **DO NOT** use preharvest-treated soybean for seed unless a germination test with an acceptable result of 95% germination or better is performed on the seed.
- **DO NOT** harvest soybeans until 7 days after a preharvest application.
- **DO NOT** feed soybean fodder or hay following preharvest application of **Engenia**.
- **DO NOT** make preharvest applications in California.

Sugarcane

Engenia may be used any time after weed emergence but before the close-in stage of sugarcane to control many annual and perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed.

Apply 6.4 to 12.8 fl ozs/A of **Engenia** for control of annual weeds and 12.8 fl ozs/A for control or suppression of biennial and perennial weeds. Use the higher rate of the specified rate range when treating dense vegetative growth. Repeat treatment may be made as needed; however, **DO NOT** apply more than the annual maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A).

When possible, direct the spray beneath the sugarcane canopy to minimize the likelihood of crop injury. Using directed sprays will also help maximize the spray coverage of weed foliage.

Use with Other Herbicides

Engenia may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Prowl H2O**
- atrazine

For approved tank mix options see www.engeniatankmix.com.

Sugarcane Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (1 lb dicamba ae/A) in a single application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per growing season.
- **DO NOT** harvest sugarcane until 87 days after application.

Farmstead Turf (noncropland) and Sod Farms

Engenia may be used in farmstead turf (noncropland) and sod farms to control or suppress growth of many annual, biennial, and some perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed. **Engenia** will also suppress woody brush and vine species; refer to **Table 2** for application rates based on targeted weed or woody brush and vine species and growth stage. Some weed species will require tank mixes for optimum control.

Repeat treatment may be made as needed; however, **DO NOT** apply more than 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) per growing season.

Apply 30 to 200 gallons of diluted spray per acre (3 to 17 quarts of water per 1000 sq ft), depending on density or height of weeds treated and on type of equipment used.

To avoid injury to newly seeded grasses, delay application of **Engenia** until after the second mowing. Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response.

Use with Other Herbicides

Engenia® herbicide at 3.2 to 12.8 fl ozs/A may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Drive® XLR8 herbicide**
- **Pendulum® herbicide**
- **Tower® herbicide**
- 2,4-D
- MCPA
- MCPP

For approved tank mix options see
www.engeniatankmix.com.

Farmstead Turf and Sod Farm Restrictions

- **DO NOT** use on residential sites.
- **DO NOT** apply more than 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) per growing season.
- **Areas where Roots of Sensitive Plants Extend**
 - **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) on coarse-texture soils (sand, loamy sand, or sandy loam).
 - **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** on fine-texture soils.
 - **DO NOT** make repeat applications in these areas for 30 days and until previous applications of **Engenia** have been activated in the soil by rainfall or irrigation.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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007969-00345.20171010.**NVA 2017-04-385-0200**
Supersedes: NVA 2012-04-385-0062
NVA 2016-04-385-0297
NVA 2016-04-385-0300

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709


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Message

From: Peko Rasic [peko.rasic@basf.com]
Sent: 10/4/2017 10:26:01 PM
To: Baris, Reuben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a0181e3f02a246fc915a4af026e249fc-Baris, Reuben]
CC: Maximilian M Safarpour [maximilian.safarpour@basf.com]; Jeffrey H Birk [jeffrey.birk@basf.com]
Subject: Engenia Label
Attachments: ENGENIA NVA 2017-04-385-0200_7009CR7.pdf

Hi Reuben,

Thank you for your patience with the Engenia label. Attached you will find our revised version addressing the changes we talked about yesterday morning. As discussed, we do not agree with applying the DT-use restrictions to the conventional Engenia uses, as doing so would surely drive growers to older dicamba technologies currently registered without such restrictions.

In order to address EPA's concerns, we reformatted the label elements to distinguish better between the DT-use instructions and conventional (non-DT) ones. Additionally, where instructions are more general or specific to conventional crops, we clearly direct the DT-cotton and/or DT-soybean applicator to the required DT-relevant language and point them to sections where additional DT-related information must be consulted.

We will also apply a graphical indication to all DT-relevant sections from "Application Instructions" forward to add further emphasis for the grower when applying Engenia in DT-cotton and DT-soybeans. An example of this approach is featured in the attached label.

Please feel free to contact me on my mobile or desk phone with any questions you may have.

Regards,
Peko

Peko Rasic

Product Registration Manager, APD/RNN

Phone: +1 919 547-2024 Mobile: +1-973-289-7456 Fax: +1 919 547-2850 E-Mail: peko.rasic@basf.com
Postal Address: BASF Corporation, Research Triangle Park, 27709 Research Triangle Park, USA

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From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]
Sent: Wednesday, October 4, 2017 9:59 AM
To: Peko Rasic <peko.rasic@basf.com>
Cc: Craig D Kleppe <craig.kleppe@basf.com>; Maximilian M Safarpour <maximilian.safarpour@basf.com>
Subject: Re: Status?

Thanks Peko.

Sent from my iPhone

On Oct 4, 2017, at 9:58 AM, Peko Rasic <peko.rasic@basf.com> wrote:

Hi Reuben,

A team of us are confined to a room hammering out the last details. We'll have something to you by late afternoon today. Hopefully sooner though.

peko

From: Baris, Reuben [<mailto:Baris.Reuben@epa.gov>]
Sent: Wednesday, October 4, 2017 9:54 AM
To: Peko Rasic <peko.rasic@basf.com>
Cc: Craig D Kleppe <craig.kleppe@basf.com>; Maximilian M Safarpour <maximilian.safarpour@basf.com>
Subject: Status?

Hi Max,

I didn't see anything come through at the end of the day yesterday or into the evening. Can you share where you all are with your label? I need to give an update to folks on this end....

Thanks
Reuben

Sent from my iPhone

On Oct 2, 2017, at 2:21 PM, Peko Rasic <peko.rasic@basf.com> wrote:

Hi Reuben,

We'll look over the edits and get back to you shortly.

Regards,
Peko

Peko Rasic
Product Registration Manager, APD/RNN

Phone: +1 919 547-2024 Mobile: +1-973-289-7456 Fax: +1 919 547-2850 E-Mail:
peko.rasic@basf.com

Postal Address: BASF Corporation, Research Triangle Park, 27709 Research Triangle Park, USA

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From: Baris, Reuben [<mailto:Baris.Reuben@epa.gov>]
Sent: Monday, October 2, 2017 12:55 PM
To: Maximilian M Safarpour <maximilian.safarpour@basf.com>
Cc: Craig D Kleppe <craig.kleppe@basf.com>; Peko Rasic <peko.rasic@basf.com>;
Jeffrey H Birk <jeffrey.birk@basf.com>
Subject: label edits

Max,

Attached are our comments on the draft labeling. I left you a voicemail and was hoping to talk through this with you, but since we're all under short time constraints I wanted to get you my team's initial review of what you sent us last Thursday. Give me a call when you have a chance. I'm cc'ing Craig and Peko at the direction of Jeff, since he's out of the office this week.

Reuben

REUBEN BARIS | ACTING CHIEF | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-
7356

RESTRICTED USE PESTICIDE

For Retail Sale To and Use Only by Certified Applicators; Only for those uses covered by Certified Applicators certification. Only certified applicators may apply this product-those acting under the supervision of a certified applicator cannot apply this product.

This label supersedes any previously issued supplemental labeling.

Check the state registration status of **Engenia® herbicide** before use.



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Group

4

Herbicide

Engenia®

Herbicide

For weed control in Dicamba-tolerant (DT) cotton; Dicamba-tolerant (DT) soybean; asparagus; conservation reserve programs (CRP); corn; cotton; fallow cropland; farmstead turf (noncropland) and sod farms; grass grown for seed; pasture, hay, rangeland, and farmstead (noncropland); proso millet; small grain; sorghum; soybean; and sugarcane

Active Ingredient*:

Dicamba: N,N-Bis-(3-aminopropyl)methylamine salt of 3,6-

dichloro-*o*-anisic acid 60.8%

Other Ingredients: 39.2%

Total: 100.0%

* Contains 48.38% dicamba (5 pounds acid equivalent per gallon or 600 grams per liter)

EPA Reg. No. 7969-345

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • DO NOT induce vomiting unless told to do so by a poison control center or doctor. • DO NOT give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed or inhaled. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

All mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- A NIOSH-approved dust/mist filtering respirator with any R, P, or HE filter or a NIOSH-approved number prefix TC-84A.

See **Engineering Controls** for additional requirements. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate. Apply this product only as directed on the label.

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Ground and Surface Water Protection

Point-source Contamination

To prevent point-source contamination, **DO NOT** mix or load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. **DO NOT** apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have

sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent:

- Back-siphoning into wells
- Spills
- Improper disposal of excess pesticide, spray mixtures, or rinsate

Check valves or antisiphoning devices must be used on all mixing equipment.

Movement by Surface Runoff or Through Soil

DO NOT apply under conditions which favor runoff.

DO NOT apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for groundwater contamination. Groundwater contamination may occur in areas where soils are permeable or coarse and groundwater is near the surface. **DO NOT** apply to soils classified as sand with less than 3% organic matter and where groundwater depth is shallow. To minimize the possibility of groundwater contamination, carefully follow the specified rates as affected by soil type in the **Crop-specific Information** section of this label.

Movement by Water Erosion of Treated Soil

DO NOT apply this product through any type of irrigation system including sprinkler, drip, flood, or furrow irrigation. Ensure treated areas have received at least 1/2-inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

Endangered Species

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This labeling must be in the user's possession during application.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Observe all precautions and limitations in this label and the labels of products used in combination with this product. Keep containers closed to avoid spills and contamination.

All applicable directions, restrictions, precautions, and **Conditions of Sale and Warranty** are to be followed.

RESTRICTED USE PESTICIDE APPLICATION RECORD KEEPING AND TRAINING REQUIREMENTS

Record Keeping Requirements

Applicators must keep the following records for a period of two years; records must be generated within 14 days of application and a record must be kept for every individual application. Records must be made available to State Pesticide Control Official(s), USDA, and EPA upon request. The following information must be recorded and kept as required by the Federal Pesticide Record Keeping Program, 7 CFR Part 110:

1. **Product name**
2. **EPA registration number**
3. **Total amount applied**
4. **Application month, day, and year**
5. **Location of the application**
6. **Crop or site receiving the application**
7. **Size of area treated**
8. **Full name of the certified applicator**
9. **Certification number of the certified applicator**
10. **Training Requirement:** proof that the applicator completed training described in this section.
11. **Application Timing:** whether the applicator applied this product preemergence or, the number of days after planting if the applicator applied this product postemergence.
12. **Receipts of purchase:** receipts for the purchase of this product.
13. **Product Label:** a copy of this product label(s), and any state special local needs label that supplements this label.
14. **Sensitive Crops Awareness:** Document that the applicator checked an applicable sensitive crop registry; or document that the applicator surveyed neighboring fields for any sensitive areas or susceptible crops prior to application. At a minimum, records must include the date the applicator consulted the specialty crop registry or surveyed neighboring fields, and the name of the specialty crop registry the applicator consulted.
15. **Spray System Cleanout:** Document that the applicator complied with the section of this label titled: **"Spray System Equipment Clean-out"**. At a minimum, records must include the date the applicator performed the required cleanout, and cleanout method that the applicator followed.
16. **Tank Mix Products:** a list of all products (pesticides, adjuvants, and other products) that the applicator tank mixed with this product for each application. Include EPA registration numbers in the case of any pesticides.
17. **Start and Finish Times:** the time the applicator begins and the time the applicator completes applications of this product.

(continued)

RESTRICTED USE PESTICIDE

APPLICATION RECORD KEEPING AND TRAINING REQUIREMENTS *(continued)*

18. **Nozzle Selection:** which spray nozzle the applicator used to apply this product, and the nozzle pressure the applicator set the sprayer to.
19. **Air Temperature:** the air temperature at boom height at the time the applicator starts and finishes applications of this product.
20. **Wind Speed and Direction:** the wind speed at boom height at the time the applicator starts and finishes applications of this product, and the wind direction at the time the applicator starts and finishes applications of this product.

Training Requirements

Prior to applying this product, applicators must complete dicamba or auxin-specific training. If training is available and required by the state where the applicator intends to apply this product, the applicator must complete that training before applying this product in-crop. If your state does not require auxin or dicamba-specific training, then the applicator must complete dicamba or auxin-specific training provided by one of the following sources: a) a registrant of a dicamba product approved for in-crop use with dicamba-tolerant crops, or b) a state or state-authorized provider.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about **Personal Protective Equipment (PPE)** and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the WPS.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **24 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as, plants, soil, or water is:

- Coveralls worn over short-sleeved shirt and short pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- Chemical-resistant headgear for overhead exposure
- Protective eyewear

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides. **Engenia® herbicide** freezes around 15° F and is stable under conditions of freezing and thawing. Product that has been frozen should be thawed and recirculated prior to use.

Pesticide Disposal

Wastes resulting from this product may be disposed of on-site or at an approved waste disposal facility. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under **Subtitle C** of the **Resource Conservation and Recovery Act**. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

(continued)

STORAGE AND DISPOSAL (continued)

Container Handling (continued)

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to take if material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

Engenia® herbicide is a water-soluble herbicide that provides postemergence and moderate rate-dependent residual control of many annual broadleaf weeds. **Engenia** is also active on many biennial and perennial broadleaf weeds as well as woody brush and vines (refer to **Table 1** for weeds controlled or suppressed).

Engenia can be used in specific field and row crops, fallow and postharvest croplands, and sod farms. **Engenia** does not control grass weeds and must be used sequentially or tank mixed with a grass herbicide for a complete weed control program. See **Tank Mixing** section for important information on herbicide tank mixes or **Crop-specific Information** section(s) for recommendations on sequential programs.

Table 1. Weeds Controlled or Suppressed

Engenia will control or suppress the following weeds when used at rates described in **Table 2**.

Common Name	Scientific Name
Annuals	
Alkanet	<i>Lithospermum arvense</i>
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Amaranth, Powell	<i>Amaranthus powellii</i>
Amaranth, spiny	<i>Amaranthus spinosus</i>
Aster, slender	<i>Aster subulatus</i>
Bedstraw, catchweed	<i>Galium aparine</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Broomweed, common	<i>Gutierrezia dracunculoides</i>
Buckwheat, tartary	<i>Fagopyrum tataricum</i>
Buckwheat, wild	<i>Polygonum convolvulus</i>
Buffalobur	<i>Solanum rostratum</i>
Burclover, California	<i>Medicago polymorpha</i>
Burcucumber	<i>Sicyos angulatus</i>
Buttercup, corn	<i>Ranunculus arvensis</i>
Buttercup, creeping	<i>Ranunculus repens</i>
Buttercup, roughseed	<i>Ranunculus muricatus</i>
Buttercup, western field	<i>Ranunculus occidentalis</i>
Carpetweed	<i>Mollugo verticillata</i>
Catchfly, nightflowering	<i>Silene noctiflorum</i>
Chamomile, corn	<i>Anthemis arvensis</i>
Chervil, bur	<i>Anthriscus caucalis</i>
Chickweed, common	<i>Stellaria media</i>
Clover	<i>Trifolium</i> spp.
Cockle, corn	<i>Agrostemma githago</i>
Cockle, cow	<i>Vaccaria pyramidata</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Copperleaf, hophornbeam	<i>Acalypha ostryifolia</i>
Cornflower	<i>Centaurea cyanus</i>
Croton, tropic	<i>Croton glandulosus</i>
Croton, woolly	<i>Croton capitatus</i>
Daisy, English	<i>Bellis perennis</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Annuals (continued)	
Dragonhead, American	<i>Dracocephalum parviflorum</i>
Eveningprimrose, cutleaf	<i>Oenothera laciniata</i>
Falseflax, smallseed	<i>Camelina microcarpa</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Flixweed	<i>Descurainia sophia</i>
Fumitory	<i>Fumaria officinalis</i>
Goosefoot, nettleleaf	<i>Chenopodium murale</i>
Hempnettle	<i>Galeopsis tetrahit</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed (Marestail)	<i>Conyza canadensis</i>
Jacob's-ladder	<i>Polemonium caeruleum</i>
Jimsonweed	<i>Datura stramonium</i>
Knawel (German moss)	<i>Scleranthus annuus</i>
Knotweed, prostrate	<i>Polygonum aviculare</i>
Kochia ³	<i>Kochia scoparia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lettuce, miner's	<i>Claytonia perfoliata</i>
Lettuce, prickly	<i>Lactuca serriola</i>
Mallow, common	<i>Malva neglecta</i>
Mallow, Venice	<i>Hibiscus trionum</i>
Mayweed	<i>Anthemis cotula</i>
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>
Morningglory, tall	<i>Ipomoea purpurea</i>
Mustard, black	<i>Brassica nigra</i>
Mustard, blue	<i>Chorispora tenella</i>
Mustard, tansy	<i>Descurainia pinnata</i>
Mustard, treacle	<i>Erysimum repandum</i>
Mustard, tumble	<i>Sisymbrium altissimum</i>
Mustard, wild	<i>Sinapis arvensis</i>
Mustard, yellowtop	<i>Sinapis</i> spp.
Nightshade, black	<i>Solanum nigrum</i>
Nightshade, cutleaf	<i>Solanum triflorum</i>
Pennycress, field	<i>Thlaspi arvense</i>
Pepperweed, Virginia	<i>Lepidium virginicum</i>
Pigweed, prostrate	<i>Amaranthus blitoides</i>
Pigweed, redroot (rough)	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, tumble	<i>Amaranthus albus</i>
Pineappleweed	<i>Matricaria matricarioides</i>
Poorjoe	<i>Diodia teres</i>
Poppy, red horn	<i>Glaucium corniculatum</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane, common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Radish, wild	<i>Raphanus raphanistrum</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>

(continued) 6

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Annuals (continued)	
Ragweed, giant	<i>Ambrosia trifida</i>
Ragweed, lanceleaf	<i>Ambrosia bidentata</i>
Rocket, London	<i>Sisymbrium irio</i>
Rocket, yellow	<i>Barbarea vulgaris</i>
Rubberweed, bitter	<i>Hymenoxys odorata</i>
Salsify	<i>Tragopogon porrifolius</i>
Senna, coffee	<i>Senna occidentalis</i>
Sesbania, hemp	<i>Sesbania exaltata</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Sicklepod	<i>Cassia obtusifolia</i>
Sida, prickly (Teaweed)	<i>Sida spinosa</i>
Smartweed, green	<i>Polygonum scabrum</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Sneezeweed, bitter	<i>Helenium amarum</i>
Sowthistle, annual	<i>Sonchus oleraceus</i>
Sowthistle, spiny	<i>Sonchus asper</i>
Spanish needles	<i>Bidens bipinnata</i>
Spikeweed, common	<i>Hemizonia pungens</i>
Spurge, prostrate	<i>Chamaesyce humistrata</i>
Spurry, corn	<i>Spergula arvensis</i>
Starbur, bristly	<i>Acanthospermum hispidum</i>
Starwort, little	<i>Stellaria graminea</i>
Sumpweed, rough	<i>Iva ciliata</i>
Sunflower, common (wild)	<i>Helianthus annuus</i>
Thistle, Russian	<i>Salsola iberica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Waterhemp	<i>Amaranthus tuberculatus</i>
Waterprimrose, winged	<i>Ludwigia decurrens</i>
Wormwood	<i>Artemisia annua</i>
Biennials	
Burdock, common	<i>Arctium minus</i>
Carrot, wild	<i>Daucus carota</i>
Cockle, white	<i>Melandrium album</i>
Eveningprimrose, common	<i>Oenothera biennis</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Gromwell	<i>Lithospermum</i> spp.
Knapweed, diffuse	<i>Centaurea diffusa</i>
Knapweed, spotted	<i>Centaurea maculosa</i>
Mallow, dwarf	<i>Malva borealis</i>
Plantain, bracted	<i>Plantago aristata</i>
Ragwort, tansy	<i>Senecio jacobaea</i>
Starthistle, yellow	<i>Centaurea solstitialis</i>
Sweetclover	<i>Melilotus</i> spp.
Teasel	<i>Dipsacus sativus</i>
Thistle, bull	<i>Cirsium vulgare</i>
Thistle, musk	<i>Carduus nutans</i>
Thistle, plumeless	<i>Carduus acanthoides</i>
Thistle, variegated (milk)	<i>Silybum marianum</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Perennials¹	
Alfalfa	<i>Medicago sativa</i>
Apple, tropical soda	<i>Solanum viarum</i>
Artichoke, Jerusalem	<i>Helianthus tuberosus</i>
Aster, spiny	<i>Aster spinosus</i>
Aster, whiteheath	<i>Aster pilosus</i>
Bedstraw, smooth	<i>Gallium mollugo</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Bindweed, hedge	<i>Calystegia sepium</i>
Blueweed, Texas	<i>Helianthus ciliaris</i>
Bursage, woollyleaf	<i>Ambrosia grayi</i>
Buttercup, tall	<i>Ranunculus acris</i>
Campion, bladder	<i>Silene vulgaris</i>
Chickweed, field	<i>Cerastium arvense</i>
Chickweed, mouseear	<i>Cerastium vulgatum</i>
Chicory	<i>Cichorium intybus</i>
Clover, hop	<i>Trifolium aureum</i>
Dandelion, common	<i>Taraxacum officinale</i>
Dock, broadleaf (Bitterdock)	<i>Rumex obtusifolius</i>
Dock, curly	<i>Rumex crispus</i>
Dogbane, hemp	<i>Apocynum cannabinum</i>
Dogfennel (Cypressweed)	<i>Eupatorium capillifolium</i>
Fern, bracken	<i>Pteridium aquilinum</i>
Garlic, wild	<i>Allium vineale</i>
Goldenrod, Canada	<i>Solidago canadensis</i>
Goldenrod, Missouri	<i>Solidago missouriensis</i>
Goldenweed, common	<i>Isocoma coronopifolia</i>
Hawkweed	<i>Hieracium</i> spp.
Henbane, black	<i>Hyoscyamus niger</i>
Horsenettle, Carolina	<i>Solanum carolinense</i>
Ironweed	<i>Vernonia</i> spp.
Knapweed, black	<i>Centaurea nigra</i>
Knapweed, Russian	<i>Centaurea repens</i>
Lespedeza, sericea	<i>Lespedeza cuneata</i>
Milkweed, climbing	<i>Sarcostemma cyanchoides</i>
Milkweed, common	<i>Asclepias syriaca</i>
Milkweed, honeyvine	<i>Ampelamus albidus</i>
Milkweed, western whorled	<i>Asclepias subverticillata</i>
Nettle, stinging	<i>Urtica dioica</i>
Nightshade, silverleaf	<i>Solanum elaeagnifolium</i>
Onion, wild	<i>Allium canadense</i>
Plantain, broadleaf	<i>Plantago major</i>
Plantain, buckhorn	<i>Plantago lanceolata</i>
Pokeweed	<i>Phytolacca americana</i>
Ragweed, western	<i>Ambrosia psilostachya</i>
Redvine	<i>Brunnichia ovata</i>
Smartweed, swamp	<i>Polygonum coccineum</i>
Snakeweed, broom	<i>Gutierrezia sarothrae</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Perennials¹ (continued)	
Sorrel, red (Sheep sorrel)	<i>Rumex acetosella</i>
Sowthistle, perennial	<i>Sonchus arvensis</i>
Spurge, leafy	<i>Euphorbia esula</i>
Sundrop	<i>Oenothera perennis</i>
Thistle, Canada	<i>Cirsium arvense</i>
Thistle, Scotch	<i>Onopordum acanthium</i>
Toadflax, Dalmatian	<i>Linaria genistifolia</i>
Trumpet creeper	<i>Campsis radicans</i>
Vetch	<i>Vicia</i> spp.
Waterhemlock, spotted	<i>Cicuta maculata</i>
Waterprimrose, creeping	<i>Ludwigia peploides</i>
Woodsorrel, creeping	<i>Oxalis corniculata</i>
Woodsorrel, yellow	<i>Oxalis stricta</i>
Wormwood, Louisiana	<i>Artemisia ludoviciana</i>
Yankee weed	<i>Eupatorium compositifolium</i>
Yarrow, common	<i>Achillea millefolium</i>
Woody Brush and Vines^{1, 2}	
Alder	<i>Alnus</i> spp.
Ash	<i>Fraxinus</i> spp.
Basswood	<i>Tilia americana</i>
Beech	<i>Fagus</i> spp.
Birch	<i>Betula</i> spp.
Cherry	<i>Prunus</i> spp.
Chinquapin	<i>Chrysolepis chrysophylla</i>
Cottonwood	<i>Populus deltoides</i>
Cucumbertree	<i>Magnolia acuminata</i>
Elm	<i>Ulmus</i> spp.
Grape	<i>Vitis</i> spp.
Hemlock	<i>Tsuga</i> spp.
Hickory	<i>Carya</i> spp.
Honeylocust	<i>Gleditsia triacanthos</i>
Honeysuckle	<i>Lonicera</i> spp.
Hornbeam	<i>Carpinus</i> spp.
Huckleberry	<i>Vaccinium arboreum</i>
Huisache	<i>Acacia farnesiana</i>
Ivy, poison	<i>Rhus radicans</i>
Kudzu	<i>Pueraria lobata</i>
Locust, black	<i>Robinia pseudoacacia</i>
Maple	<i>Acer</i> spp.
Mesquite	<i>Prosopis ruscifolia</i>
Oak	<i>Quercus</i> spp.
Oak, poison	<i>Rhus toxicodendron</i>
Olive, Russian	<i>Elaeagnus angustifolia</i>
Persimmon, eastern	<i>Diospyros virginiana</i>
Pine	<i>Pinus</i> spp.
Poplar	<i>Populus</i> spp.
Rabbitbrush	<i>Chrysothamnus pulchellus</i>

(continued)

Table 1. Weeds Controlled or Suppressed (continued)

Common Name	Scientific Name
Woody Brush and Vines^{1,2} (continued)	
Rose, multiflora	<i>Rosa multiflorum</i>
Sassafras	<i>Sassafras albidum</i>
Serviceberry	<i>Amelanchier sanguinea</i>
Spicebush	<i>Lindera benzoin</i>
Spruce	<i>Picea</i> spp.
Sumac	<i>Rhus</i> spp.
Sycamore	<i>Platanus occidentalis</i>
Tarbrush	<i>Flourensia cernua</i>
Willow	<i>Salix</i> spp.
Witchhazel	<i>Hamamelis macrophylla</i>

¹ Suppression only.² Not for use in California.³ Except dicamba resistant.

Product Stewardship Practices

For DT-cotton and DT-soybean, applicator MUST ALSO follow specific instructions under relevant DT Crop-specific Information section(s).

- Apply **Engenia**® herbicide to weeds 4 inches or less in size for best performance.
- Apply **Engenia** at the labeled rate.
- Use **Engenia** as part of a herbicide program that includes the use of residual herbicides and herbicides with alternate sites of action to reduce resistance selection pressure.
- Select nozzles that produce **extremely coarse to ultra-coarse** spray droplets.
- Maintain boom height 24 inches or less from target.
- Identify areas of sensitive nontarget plants and maintain proper setback distance from these areas.
- Thoroughly clean spray equipment after application.

Mode of Action

Dicamba, the active ingredient in **Engenia**, is a **Group 4** (WSSA) herbicide. Herbicides in this group mimic auxin (a plant hormone) resulting in a hormone imbalance in susceptible plants that interferes with normal plant growth (e.g. cell division, cell enlargement, and protein synthesis). **Engenia** is readily absorbed by leaves, roots, and shoots; translocates throughout the plant; and accumulates in areas of active growth to provide postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds.

Any weed population may contain plants naturally resistant to **Group 4** herbicides. Weeds resistant to **Group 4** herbicides may be effectively managed using herbicide(s) from a different group and/or by using cultural or mechanical practices. Report any incidence of non-performance of this product against a particular weed species at www.EngeniaQuestions.com. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant

weeds. Additional information about weeds which are known to be resistant to dicamba can be found at www.Resistance-Information.BASF.US.

Resistance Management

While weed resistance to **Group 4** herbicides is infrequent, populations of resistant biotypes are known to exist. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, proper fertilizer placement, optimum seeding rate/row spacing, and timely tillage.

To aid in the prevention of developing weeds resistant to this product, the following steps should be followed where practical:

- Start clean with tillage or an effective burndown herbicide program.
- **DO NOT** rely on a single herbicide site of action for weed control during the growing season.
- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Apply full rates of **Engenia** for the most difficult-to-control weed in the field at the specified time (correct weed size) to minimize weed escapes.
- Use of preemergence herbicides that provide soil residual control of broadleaf and grass weeds is recommended to reduce early season weed competition and allow for more timely in-crop postemergence herbicide applications.
- Avoid application of herbicides with the same site of action more than twice a season.
- Scout fields after application to detect weed escapes or shifts in weed species.
- Report any incidence of non-performance of this product against a particular weed species to your BASF retailer, representative or online at www.EngeniaQuestions.com for Dicamba-tolerant (DT) uses or www.Non-Performance.BASF.US for conventional (non-DT) uses.
- If resistance is suspected, treat weed escapes with a herbicide having a mode of action other than **Group 4** and/or use non-chemical methods to remove escapes, as is practical, with the goal of preventing further seed production.
- For more information about weeds that are known to be resistant to dicamba go to www.Resistance-Information.BASF.US.

Additionally, users should follow as many of the following herbicide resistance management practices as is practical:

- Use a broad spectrum soil-applied herbicide with other modes of action as a foundation in a weed control program.
- Utilize sequential applications of herbicides with alternative modes of action.
- Rotate the use of this product with non-**Group 4** herbicides.

- Avoid making more than two applications of **Engenia® herbicide** and any other **Group 4** herbicides within a single growing season unless mixed with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Thoroughly clean plant residues from equipment before and after leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields during and after harvest to reduce weed seed production.
- Contact the local agricultural extension service, BASF representative, ag retailer or crop consultant for further guidance on weed control practices as needed.

Crop Tolerance

Crops growing under normal environmental conditions are tolerant to **Engenia** when applied according to label directions. Crop injury may occur under stressful growing conditions (e.g. low soil fertility, seedling disease, extreme hot or cold weather, excessive moisture, high soil pH, high soil salt concentration, drought).

Application Instructions

Application instructions for Engenia in DT crops may differ significantly from use directions in conventional crops.

NO aerial application to DT-cotton or DT-soybeans.

Engenia can be applied to actively growing weeds as a band, broadcast, or spot spray application for postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds. Except for DT-cotton and DT-soybeans, **Engenia** may be applied by air or ground depending on crop-specific use.

Make postemergence applications of **Engenia** when broadleaf weeds are small and actively growing. An adjuvant is recommended with **Engenia** for best postemergence activity; refer to **Adjuvants** section and crop-specific information sections for details. Postemergence activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions, or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger broadleaf weeds, use higher spray volumes and a higher application rate within an application rate range.

Cultivation should be delayed until 7 days after applying **Engenia** or a reduction in weed control may occur.

Use extreme care when applying **Engenia** to prevent injury to desirable plants. **Engenia** may cause injury to desirable sensitive plants when contacting their roots, stems, or foliage.

Sensitive crops include, but are not limited to:

- non-DT soybeans
- cucumber and melons (EPA **Crop Group 9**)
- flowers
- fruit trees
- grapes
- ornamentals including greenhouse-grown and shade house-grown broadleaf plants
- peanuts
- peas and beans (EPA **Crop Group 6**)
- peppers, tomatoes, and other fruiting vegetables (EPA **Crop Group 8**)
- potato
- sweet potato
- tobacco

These plants are most sensitive to **Engenia** during periods of rapid vegetative growth or flowering. Refer to **Application Methods and Equipment** section.

Application Rates

Always read and follow crop-specific use directions.

Table 2. Application Rate to Control or Suppress Target Weed by Weed Type and Growth Stage

(See **Crop-specific Information** section for additional directions and exceptions)

Weed Type and Growth Stage	Rate/Acre ^{2,5} (fl ozs)
Annual	
Small, actively growing ¹ (less than 4-inches tall)	3.2 to 12.8
Small, actively growing (less than 4-inches tall) plus moderate residual control	12.8
Biennial	
Rosette diameter 1 to 3 inches ¹	6.4 to 12.8
Rosette diameter more than 3 inches	12.8
Perennial^{3,4}	
Top growth suppression	6.4 to 12.8
Top growth control and root suppression	12.8
Woody Brush and Vines⁴	
Top growth suppression	12.8

¹ Although rates below 12.8 fl ozs/A may provide adequate control of annual and biennial weeds, for optimum performance use listed rates or lower rates tank mixed with other herbicides that are effective on the same species and biotype.

² Use the higher rate within listed ranges when treating weeds resistant to other sites of action, dense vegetative growth, or weeds with a well-established root system. The higher rates also provide moderate residual annual weed control.

³ Refer to **Table 1** for use on perennials in California.

⁴ **Engenia** will suppress the top growth of herbaceous perennial and woody brush and vines and can be combined with other herbicides to improve control. Not for use in California.

⁵ **DO NOT** broadcast-apply more than 12.8 fl ozs/A per application. Retreatment or tank mixes may be necessary for best control of some weeds. However, sequential applications must not exceed a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year.

Application Methods and Equipment

NO aerial application to DT-cotton or DT-soybeans.

Except for DT-cotton and DT-soybeans, **Engenia® herbicide** may be applied by air or ground depending on the crop-specific use. Thorough spray coverage is important for best broadleaf weed control and can be improved with adjuvant, nozzle, and spray volume selection.

Calibrate application equipment for accurate target spray volume and application rate to ensure uniform distribution of spray and to avoid spray drift to nontarget areas. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the labeled use rates.

Engenia may be applied using water; consult crop-specific information sections of this label for other spray carrier options.

Aerial Application

Use 1 to 10 gallons of water per acre (2 to 20 gallons diluted spray per treated acre for preharvest uses). Use the higher spray volume when treating dense or tall vegetation. **DO NOT** apply when conditions favor drift from target area.

Ground Application

Banding Applications

When applying **Engenia** by banding, use the following formula to calculate the amount of herbicide and water volume needed:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

Broadcast Applications

Unless noted in the crop-specific information section, use a spray volume of 5 or more gallons of water per treated acre. Thorough coverage of existing vegetation is essential for postemergence applications; higher spray volumes may be necessary for optimum performance.

Wiper Applications

Engenia may be applied through wiper application equipment to control or suppress actively growing broadleaf weeds, brush, and vines. Use a 50% solution containing 1 part **Engenia** to 1 part water.

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** [0.5 lb dicamba acid equivalent (ae) per acre] per application.
- **DO NOT** contact desirable vegetation with herbicide solution. Wiper application may be made to crops (including pastures) and noncropland areas described in this label.
- **EXCEPTION: DO NOT** use wiper application on non-dicamba-tolerant cotton or soybean.

Spray Drift Management

For DT-cotton and DT-soybean, applicator **MUST ALSO** follow specific instructions under relevant **DT Crop-specific Information section(s)**.

Avoiding spray drift at the application site is the responsibility of the applicator. The spray system and weather-related factors determine the potential for spray drift. The applicator is responsible for considering these factors when making application decisions to avoid spray drift onto nontarget areas.

Applicators must follow application requirements to avoid spray drift hazards, including those found in this labeling and applicable state and local regulations and ordinances. Where states have more stringent regulations, they must be observed.

All application equipment must be properly maintained and calibrated using appropriate carriers.

The applicator should be familiar with all factors that affect spray drift. The information covered in the following spray drift reduction review must be considered before application.

Controlling Droplet Size

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

See crop-specific information sections for specific application requirements. The most effective way to reduce drift potential is to use nozzles that produce large spray droplets. However, applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind; Temperature and Humidity; and Temperature Inversions**).

- **Nozzle Type** - Use nozzles designed to deliver extremely coarse to ultra coarse spray droplets. Spray droplets (volume median diameter of 450 microns or more) as defined by ASAE standard S-572.1, and as shown in the nozzle manufacturer's catalog.
- **Volume** - Use high flow rate (large orifice) nozzles to apply the highest practical spray volume. Nozzles with higher flow rates generally produce larger droplets.
- **Pressure** - **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate (large orifice) nozzles instead of increasing pressure. Ensure sprayer rate controller hardware (if so equipped) does not allow pressure increases above the desired range.
- **Temperature and Humidity** - Low humidity and high temperatures increase the evaporation of water from spray, reducing droplet size and increasing potential for spray drift. Avoid spraying during conditions of low humidity and high temperatures. Configure equipment to produce larger droplets to compensate for evaporation.

when applying in hot and dry conditions. Larger droplets have a lower surface-to-volume ratio and are impacted less by temperature and humidity.

Temperature Inversions

- **DO NOT** make applications of **Engenia®** herbicide when temperature inversions exist at the field level.
- **For DT-cotton and DT-soybean apply only during the following period: sunrise until two hours before sunset.**

Temperature inversions increase drift potential because fine droplets may remain suspended in the air longer after application. Suspended droplets can move in unpredictable directions because of the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light-to-no wind. Inversions begin to form as the sun sets and often continue into the morning before surface warming. Their presence can be indicated by ground fog, smoke not rising, dust hanging over a road, or presence of dew or frost. Smoke that layers and moves laterally (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Inversion conditions typically dissipate with increased winds (above 3 MPH) or when surface air begins to warm (3° F from morning low).

Sensitive Areas

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

Engenia should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or sensitive crop plants) is minimal (e.g. when the wind is blowing away from sensitive areas). Applicators should survey the surrounding area and consult sensitive crop registries, if available, before making an application of **Engenia**.

Setback Distance to Sensitive Areas

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

Avoid potential adverse effects to nontarget areas by maintaining a setback between the application area and the closest downwind edge of sensitive terrestrial habitats (such as forested areas, grasslands, hedgerows, riparian areas, shelter belts, shrub lands, and woodlots) and sensitive crop plants.

Wind Speed

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift. Measure wind speed at the boom height. **DO NOT** apply **Engenia** when wind speed exceeds 15 miles per hour. Application is permitted at wind speeds less than 3 mph only if steps have been taken to confirm that a temperature inversion is not present at field level (see **Temperature Inversions** section).

Aerial Application Spray Drift Management

NO aerial application to DT-cotton or DT-soybeans.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

- **Nozzle Type** - Use a nozzle type designed for aerial application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid-stream nozzles oriented straight back produce the largest droplets and lowest drift.
- **Nozzle Orientation and Location** - Nozzles must always point backward parallel with the airstream and never point downward more than 45 degrees. Significant deflection from horizontal will reduce droplet size and increase drift potential. The distance of the outermost nozzles on the boom must not exceed 75% of the length of the wingspan or 90% of rotor-blade diameter.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

DO NOT use aerial equipment if spray droplets can be moved by wind into areas where sensitive crops are growing or if temperature inversions exist.

Ground Application Spray Drift Management

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

- **Nozzle Type** - Correct nozzle selection is one of the most important parameters in drift reduction. Use nozzles that minimize the production of fine spray droplets less than 150 microns. Apply **Engenia** using nozzles that deliver **extremely coarse to ultra-coarse** spray droplets (volume median diameter of 450 microns or more) as defined by ASAE standard S-572.1, and as shown in the nozzle manufacturer's catalog. Select nozzles that deliver a minimum flow rate of 0.3 gallons per minute at a pressure of 40 PSI (see nozzle manufacturer's catalog). Venturi-type nozzles are particularly suited to deliver droplet spectrums with these parameters. Examples of nozzles designed to produce **extremely coarse to ultra-coarse** spray droplets include, but are not limited to, **Turbo TeeJet® Induction**, **Greenleaf TurboDrop® XL - D version**, and **Hypro® Ultra Lo-Drift™** nozzles. Selection of nozzles that deliver large droplets may require increased spray volume per acre [gallons per acre (GPA)] to maintain coverage of target vegetation.

- **Boom Height** - Boom height should not be more than 24 inches above the weed target. Decreasing the boom height reduces exposure of droplets to environmental conditions like evaporation and wind. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle-to-target height.
- **Hooded Spray Booms** - Hooded spray booms are another tool that can be used to minimize spray drift potential. **Engenia® herbicide** may be applied using a hooded spray boom in combination with approved nozzles; however, the applicator must ensure the configuration is compatible with equipment used.
- **Equipment Ground Speed** - Select a ground speed under 15 MPH that will deliver the desired spray volume while maintaining the desired spray pressure. Slower speeds generally result in better spray coverage and deposition on the target area.

Spray System Equipment Clean-out

As part of the Restricted Use Product requirements, applicators must document that they have complied with the **Spray System Equipment Clean-out** section of this label.

Ensure that the spray system used to apply **Engenia** is clean before and after application. Small quantities of ammonium sulfate (AMS) can increase the volatility potential of **Engenia**.

Severe crop injury may occur if any **Engenia** remains in the spray equipment following application and is subsequently applied to sensitive crops. After using **Engenia**, clean all mixing and spray equipment (including tanks, pumps, lines, filters, screens, and nozzles) with a strong detergent based sprayer cleaner. Dispose of rinsate in compliance with local, state, and federal guidelines.

1. After spraying, drain the sprayer (including boom and lines). Avoid allowing the spray solution to remain in the spray boom lines overnight or for extended periods of time.
2. Flush tank, hoses, boom, and nozzles with clean water. Open boom ends and flush if so equipped.
3. Inspect and clean all strainers, screens, and filters.
4. Use commercial sprayer cleaner containing strong detergents according to the manufacturer's directions.
5. Wash all parts of the tank, including the inside top surface. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
6. Flush hoses, spray lines, and nozzles with the cleaning solution for at least 1 minute. Remove nozzles, screens, and strainers, and clean separately in the cleaning solution after completing the above procedure.
7. Drain pump, filter, and lines.
8. Rinse the complete spraying system with clean water.
9. Clean and rinse the exterior of the sprayer.
10. Appropriately dispose of all rinsate in compliance with local, state, and federal requirements.

Adjuvants

Refer to the DT-cotton and DT-soybean Crop-specific Information section(s) IN PLACE OF the instructions below when making applications in DT-crops.

See crop-specific information sections for specific application requirements. To improve postemergence weed control with **Engenia**, a Chemical Producers and Distributors Association (CPDA) certified adjuvant may be used. Some adjuvants have the potential to cause crop injury under certain conditions, at certain growth stages, and/or under other circumstances. Read all labels for products used in the tank mixture before use to determine the potential for crop injury.

BASF recommends the use of quality adjuvants with **Engenia** such as **Astonish™**, **Class Act®**, **Grounded®**, **Iconic®**, **Jackhammer™ Elite**, **R-11®**, **Ridion®**, **Strike Force®**, and **Verifact**.

Surfactants and Spreaders

Nonionic Surfactants/Spreaders (NIS)

Use an agriculturally approved nonionic surfactant (containing at least 80% active ingredient) at 1 to 2 pints/100 gallons [0.12 to 0.25% volume/volume (v/v)]. Use the highest rate of NIS when using the lower rate ranges of a tank mix or when treating more mature and difficult-to-control weeds or dense vegetative growth.

OR

Oil Concentrate Surfactants (COC, HSOC, MSO)*

When specifically allowed in crop specific information sections of this label, oil concentrate may be used at 2 to 4 quarts/100 gallons (0.5% to 1.0% v/v), but at least 1 pint/A.

Crop oil concentrate must contain either a petroleum-oil or vegetable-oil base and must:

- Be nonphytotoxic
- Contain only EPA-exempt ingredients
- Provide good mixing quality in the jar test
- Be successful in local experience

Petroleum-oil and vegetable-oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

* COC - crop oil concentrate
HSOC - high surfactant oil concentrate
MSO - methylated seed oil

Water Conditioners and Nitrogen Additives

Hard water does not usually affect the activity of **Engenia® herbicide**; however, other tank mix components may be adversely affected (e.g. glyphosate). Use of a conditioning agent should be considered when hard water (i.e. total calcium, magnesium, and iron content above 500 ppm) is used as a spray carrier. A neutral buffering agent may be warranted if the water source or tank mix components will create an acidic spray solution less than pH 5.

Deposition Aids

Consider using a CPDA-approved deposition aid when spraying **Engenia** to further reduce fine droplets. Not all deposition aids are compatible with every nozzle type and pesticide/adjuvant combination. Check with the additive manufacturer to ensure the deposition aid will work properly with the spray nozzle, spray pressure, and your specific spray solution. Use of a deposition aid does not replace the need for proper nozzle selection (see **Ground Application Spray Drift Management** section).

Tank Mixing Information

For DT-cotton and DT-soybean, applicator MUST ALSO follow specific instructions under relevant DT Crop-specific Information section(s).

See crop-specific information sections for specific application requirements. **Engenia** may be tank mixed with one or more registered herbicide products according to the specific tank mixing instructions in this label and respective product labels. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for the specific crop use; follow required crop rotation restrictions. Read and follow the applicable restrictions and limitations and **Directions For Use** on all product labels involved in tank mixing. Always follow the most restrictive label use directions; refer to crop-specific information section for details.

Mixing **Engenia** with postemergence grass (graminicide) herbicides may reduce the effectiveness of those products. Follow graminicide label when mixing with **Engenia** to ensure optimum weed control. Physical incompatibility, reduced weed control, or crop injury may result from mixing **Engenia** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Local agricultural authorities may be a source of information when using other than BASF-recommended tank mixes.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the following **Mixing Order** instructions using 2 teaspoons for

each pound or 1 teaspoon for each pint of labeled use rate per acre.

3. Cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface; fine particles that precipitate to the bottom; or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Maintain continuous and constant agitation throughout mixing and application until spraying is completed. Except when mixing products in PVA bags, maintain constant agitation during mixing and application.

1. **Water** - Begin by agitating a thoroughly clean sprayer tank 1/2 to 3/4 full of clean water.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives**
5. **Water-dispersible products** (such as dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products and additives (Engenia)**
7. **Emulsifiable concentrates** (including NIS and oil concentrate)
8. Remaining quantity of water

Maintain continuous and constant agitation throughout mixing and application until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

Use Precautions

- **Rainfast Period** - **Engenia** is rainfast 4 hours after application. Postemergence activity may be reduced if rain or irrigation occurs within 4 hours of application.
- **Maximum Seasonal Use Rate** - Refer to crop-specific information sections for maximum seasonal application rates for each crop or use pattern.
- **Stress** - Application to crops under stress because of lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures may result in crop injury.

Use Restrictions

Applicator **MUST ALSO** follow restrictions under **Crop-specific Information** section(s).

- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **DO NOT** apply **Engenia® herbicide** through any type of irrigation system (e.g. chemigation).
- **Engenia** is compatible with most pesticides; however, **DO NOT** tank mix **Engenia** with **Lorsban® insecticide**.

Crop Rotation Restrictions

Use the following information to determine the required interval between **Engenia** application and rotational crop planting as well as replanting after crop failure because of environmental factors such as drought, frost, or hail. Determine the rotational crop interval for tank mix products and use the most restrictive interval of all products applied.

Table 3. Crop Rotation Restrictions by Application Rate

Crop	Engenia (fl ozs/A)		
	≤ 6.4	9.6	12.8
	Rotational Crop Interval ¹ (days after application)		
Corn	0	0	0
Cotton, non-DT ²	21 ⁺	28	42
Cotton, DT	0	0	0
Sorghum	14	21	28
Soybean, non-DT ²	14	21	28
Soybean, DT	0	0	0
Grasses ³ 30 inches or more annual precipitation	14	21	28
Grasses ³ less than 30-inches annual precipitation	21	28	42
All other crops	120	120	120

¹ **DO NOT** include time when the soil is frozen and days before receiving any required rainfall or overhead irrigation.

² Following application of **Engenia** and a minimum accumulation of 1 inch of rainfall or overhead irrigation, observe the indicated waiting interval.

³ Includes barley, oats, wheat, and other grass crops. Small grains may be planted with no waiting interval following **Engenia** applied at 3.2 fl ozs/A.

⁴ **Missouri and Tennessee Only.** Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of **14 days** per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Crop-specific Information—Dicamba-tolerant (DT) Crops

The following directions for are specific for **Engenia®** herbicide use in DT cotton and DT soybeans and may differ significantly from the use directions for **Engenia** in conventional crops.

Depending on specific crop application directions, **Engenia** may be applied for postemergence control of emerged broadleaf weeds and/or residual control of germinating broadleaf weed seeds before crop planting (preplant and/or preseed) and after planting (preemergence, postemergence). Refer to **Table 1** for list of weeds controlled or suppressed.

Engenia may be applied preplant, at-planting, preemergence, and postemergence (in-crop) for weed control in DT cotton and DT soybeans.

Dicamba-tolerant (DT) Cotton and Dicamba-tolerant (DT) Soybean

Application Instructions

Engenia is EPA approved for use in DT crops in the following states, subject to county restrictions as noted:

Alabama, Arizona, Arkansas, Colorado, Delaware, Florida (excluding Palm Beach County), Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee (excluding Wilson County), Texas, Virginia, West Virginia, Wisconsin. Check the registration status of **Engenia** in each state before use.

Application Restrictions In DT Crops

- **DO NOT** apply this product aerially.
- **DO NOT** apply **Engenia** if rain is expected within four (4) hours after application.
- **DO NOT** apply at wind speeds less than 3 miles per hour or more than 10 miles per hour.
- **Apply Engenia only during the following period: sunrise until two hours before sunset.**

As part of the Restricted Use Product requirements, applicators must document that they have complied with the **Spray System Equipment Clean-out** section of this label.

Tank Mix Instructions

Engenia may only be tank-mixed with products that have been tested and found by the EPA not to have an unreasonable adverse effect on the spray drift properties of **Engenia**. A list of those EPA approved products may be found at www.engeniatankmix.com. **DO NOT** tank mix any product with **Engenia** unless:

1. You check the list of EPA approved products for use with **Engenia** at www.engeniatankmix.com no more than 7 days before applying **Engenia**; and
2. The intended product tank-mix with **Engenia** is identified on that list of tested and approved products; and
3. The intended product to be tank-mixed with **Engenia** is not prohibited on this label.
4. Additional Warnings and Restrictions:
 - Some COC, HSOC and MSO adjuvants may cause a temporary crop response.
 - **DO NOT** tank mix products containing ammonium salts such as ammonium sulfate and urea ammonium nitrate.
 - **DO NOT** add adjuvants that will further decrease pH or acidify the spray solution.
 - Drift reduction agents listed on the website above can minimize the percentage of driftable fines. However, the applicator must check with the DRA manufacturer to determine if the approved DRA will work effectively with the spray nozzle, the spray pressure, and the desired spray solution.

For an up to date and complete list of approved tank mix options with **Engenia**, please visit www.engeniatankmix.com.

APPLICATION EQUIPMENT AND TECHNIQUES

DO NOT APPLY THIS PRODUCT TO DT COTTON AND DT SOYBEANS USING AERIAL SPRAY EQUIPMENT.

Apply this product using properly maintained and calibrated equipment capable of delivering the desired volumes.

Spray Drift Management

DO NOT allow herbicide solution to drip, physically drift, or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result. The following physical spray drift management requirements must be followed.

Controlling Droplet Size

Drift potential may be reduced by applying large droplets that provide sufficient coverage and control. Applying larger droplets can reduce drift potential, but will not prevent drift if the application is made improperly, or under unfavorable environmental conditions (see the **Temperature Inversions** and the **Wind Speed** sections in the product container label).

- **Nozzle Type** - Use the **Turbo TeeJet® TTI11004** nozzle when applying **Engenia**. **DO NOT** use any other nozzle unless specifically allowed by label. To find a list of approved nozzle visit www.engeniatankmix.com no more than seven days prior to applying **Engenia**.

- **Pressure** - **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate (large orifice) nozzles instead of increasing pressure. Ensure sprayer rate controller hardware (if so equipped) does not allow pressure increases above the desired range.
- **Spray Volume** - Apply this product in a minimum of 10 gallons of spray solution per acre. Use a higher spray volume when treating dense vegetation. Higher spray volumes may also allow the use of larger nozzle orifices (sizes) which produce coarser spray droplets.
- **Equipment Ground Speed** - Select a ground speed that will deliver the desired spray volume while maintaining the desired spray pressure, but **DO NOT** exceed a ground speed of 15 miles per hour. Slower speeds generally result in better spray coverage and deposition on the target area. It is recommended that ground speed be reduced to 10 miles per hour when making applications to the edge of the treatment area.
- **Spray Boom Height** - Spray at the appropriate boom height based on nozzle selection and nozzle spacing, but **DO NOT** exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle to canopy height. Excessive boom height will increase the potential for spray drift.
- **Hooded Spray Booms** - Hooded spray booms are another tool that can be used to minimize spray drift potential. **Engenia® herbicide** may be applied using a hooded spray boom in combination with approved nozzles; however, the applicator must ensure the configuration is compatible with equipment used.

Spray System Equipment Clean-out

As part of the Restricted Use Product requirements, applicators must document that they have complied with the **Spray System Equipment Clean-out** section of this label.

Ensure that the spray system used to apply **Engenia** is clean before and after application.

For complete instructions, see **Spray System Equipment Clean-out** section within the **Application Methods and Equipment** section of this label.

Wind Speed and Direction

- **DO NOT** apply at wind speeds less than 3 miles per hour or more than 10 mph.

NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect drift.

Temperature Inversions

- **DO NOT** apply **Engenia** when temperature inversions exist at the field level.
- **Apply only during the following period: sunrise until two hours before sunset.**

Temperature inversions increase drift potential because fine droplets may remain suspended in the air longer after application. Suspended droplets can move in unpredictable directions because of the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light-to-no wind.

Inversions begin to form as the sun sets and often continue into the morning before surface warming. Their presence can be indicated by ground fog, smoke not rising, dust hanging over a road, or presence of dew or frost. Smoke that layers and moves laterally (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Inversion conditions typically dissipate with increased winds (above 3 MPH) or when surface air begins to warm (3° F from morning low).

Sensitive Areas

Engenia should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or sensitive crop plants) is minimal (e.g. when the wind is blowing away from sensitive areas).

Maintain a 110 foot buffer when applying this product from the downwind outer edges of the field, less the distance of any of the adjacent areas specified below.

To maintain the required buffer zone:

- No application swath containing **Engenia** can be initiated in, or into an area that is within the applicable buffer distance.
- The following areas may be included in the buffer distance calculation when adjacent to field edges:
 1. Roads, paved or gravel surfaces.
 2. Agricultural fields that have been prepared for planting.
 3. Planted agricultural fields containing asparagus, corn, DT cotton, DT soybeans, sorghum, proso millet, small grains and sugarcane.
 4. Areas covered by the footprint of a building, shade house, silo, feed crib, or other man made structure with walls and or roof.

Crop-specific Information—Dicamba-tolerant (DT) Crops *(continued)*

Susceptible Crops: Restrictions and precautions for the protection of susceptible crops.

- **DO NOT** apply when wind is blowing in the direction of neighboring sensitive crops.
- **DO NOT** apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.
- During application and sprayer clean-out **DO NOT** allow contact of herbicide with foliage, green stems, exposed non-woody roots of crops, and desirable plants.

In addition to the required 110 foot down wind spray buffer, additional protections are required for dicamba sensitive crops. **DO NOT** apply when wind is blowing in the direction of neighboring sensitive crops.

Sensitive crops include, but are not limited to:

- non-DT soybeans
- cucumber and melons (EPA **Crop Group 9**)
- flowers
- fruit trees
- grapes
- ornamentals including greenhouse-grown and shade house-grown broadleaf plants
- peanuts
- peas and beans (EPA **Crop Group 6**)
- peppers, tomatoes, and other fruiting vegetables (EPA **Crop Group 8**)
- potato
- sweet potato
- tobacco

Severe injury or destruction could occur if any contact between this product and these plants occurs.

Survey the area before spraying: Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants. Applicators are required to ensure that they are aware of the proximity to sensitive areas, and to avoid potential adverse effects from off-target movement of **Engenia® herbicide**. Before making an application, the applicator must survey the application site for neighboring sensitive areas. The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available.

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of equipment and weather related factors must be monitored to maximize performance and on-target spray deposition. The applicator is responsible for considering all of these factors when making a spray decision. The applicator is responsible for compliance with state and local pesticide drift regulations.

Dicamba-tolerant (DT) Cotton

Engenia may be applied preplant surface, preemergence, or postemergence (over the top) to control or suppress many annual, biennial, and perennial broadleaf weeds (see **Table 1** in the product container label) in dicamba-tolerant (DT) cotton. If **Engenia** is applied to non-dicamba-tolerant cotton other than as directed, severe crop injury will result. For non-dicamba-tolerant cotton information, see **Cotton (non-dicamba-tolerant)** section in **Crop-specific Information** section.

Application Rates and Timings

Maximum Application Rates in DT Cotton

Application Timing	Amount (fl ozs/A)
Single Preplant Preemergence Postemergence	12.8 (0.5 lb dicamba ae/A)
All Applications Combined Total per Season	51.2 (2 lbs dicamba ae/A)
Total Preplant Total Preemergence	25.6 (1 lb dicamba ae/A)
Total Postemergence	51.2 (2 lbs dicamba ae/A)

Application of **Engenia** plus specified adjuvants (refer to **Tank Mixing Information** section for details) may be made before and after cotton emergence. Separate sequential applications by 7 days or more. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Timely application will improve control and reduce weed competition. Apply preplant, preemergence, and postemergence to DT cotton only by ground. **DO NOT** apply more than 51.2 fl ozs/A of **Engenia** per year (single growing season).

Preplant and Preemergence Applications

Engenia can be applied at 12.8 fl ozs/A before, during, or after planting DT cotton. **Engenia** will provide burndown of emerged weeds. Apply as a sequential application with other preemergence herbicides to control emerged grass weeds and other broadleaf weeds, and with a preemergence residual herbicide to control germinating weed seeds. Early season weed control is critical for minimizing weed competition and protecting crop yield potential.

Postemergence Applications

Apply **Engenia** postemergence at 12.8 fl ozs/A from cotton emergence up to 7 days before harvest. **DO NOT** apply more than 12.8 fl ozs/A in a single postemergence over-the-top application of **Engenia**.

For best weed control, **Engenia® herbicide** applications should be made early in the season to small (less than 4-inches tall), actively growing weeds. Sequential postemergence applications may be necessary to control new weed flushes. Allow at least 7 days between applications. Avoid application of **Engenia** more than twice in a season to reduce resistance-selection pressure. Apply **Engenia** in a herbicide program that includes sequential application of herbicides with a different mechanism of action to control new weed regrowth.

Postemergence applications of **Engenia** mixed with some adjuvants may cause injury to DT cotton. Injury symptoms usually appear as necrotic spots on leaves. Potential for injury may be reduced when applications are made with spray volumes of at least 15 GPA and lower adjuvant rates. Symptomology is temporary with cotton recovering quickly after application.

Apply **Engenia** preplant, preemergence, and postemergence over the top by ground only.

Harvest Aid Applications

Engenia may be used for harvest aid in DT cotton. Apply **Engenia** as a broadcast spray by ground only. Applications must adhere to ground application requirements in this label; see the **Application Methods and Equipment** section in the product container label. Apply **Engenia** at least 7 days before harvest.

Use with Other Herbicides

Broad-spectrum control of grass weeds or additional broadleaf weeds may require a sequential herbicide application. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Outlook® herbicide**
- **Prowl® H2O herbicide**
- glyphosate (e.g. **Roundup® herbicide**)

DT Cotton Restrictions

- **DO NOT** apply **Engenia** to non-dicamba-tolerant cotton varieties other than as directed or severe cotton injury will occur; refer to **Cotton** section in **Crop-specific Information** section.
- Apply **Engenia** preplant, preemergence, and postemergence by ground only.
- **DO NOT** apply harvest aid application of **Engenia** within 7 days of harvest.
- **DO NOT** apply **Engenia** with ammonium-containing additives, conditioners, or fertilizers (e.g. AMS, UAN).
- Use caution when tank mixing **Engenia** with approved emulsifiable concentrates (EC) or oil-based products that may increase the potential for crop injury.

Dicamba-tolerant (DT) Soybean

Engenia may be applied preplant surface, preemergence, or postemergence (over the top) to control or suppress many annual, biennial, and perennial broadleaf weeds (see **Table 1** in the product container label) in dicamba-tolerant (DT) soybean. If **Engenia** is applied to non-dicamba-tolerant soybean other than as directed, severe crop injury will result. For non-dicamba-tolerant soybean information, see **Soybean (non-dicamba-tolerant)** section in **Crop-specific Information** section.

Application Rates and Timings

Maximum Application Rates in DT Soybean

Application Timing	Amount (fl ozs/A)
Single Preplant Preemergence Postemergence	12.8 (0.5 lb dicamba ae/A)
All Applications Combined Total per Season	51.2 (2 lbs dicamba ae/A)
Total Preplant Total Preemergence	25.6 (1 lb dicamba ae/A)
Total Postemergence	25.6 (1 lb dicamba ae/A)

Application of **Engenia** plus specified adjuvants (refer to **Tank Mixing Information** section for details) may be made before and after soybean emergence. Separate sequential applications by 7 days or more. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Timely application will improve control and reduce weed competition. Apply preplant, preemergence, and postemergence to DT soybean only by ground.

Preplant and Preemergence Applications

Engenia can be applied at 12.8 fl ozs/A before, during, or after planting dicamba-tolerant soybean. **Engenia** will provide burndown of emerged weeds and moderate residual activity. Apply as a sequential application with other labeled herbicides to control emerged grass weeds and other broadleaf weeds, and with a preemergence residual herbicide to control germinating weed seeds. Early season weed control is critical for minimizing weed competition and protecting crop yield potential.

Postemergence Applications

Up to two postemergence applications using 12.8 fl ozs/A of **Engenia** per application may be made from soybean emergence up to and including beginning bloom (R1 growth stage of soybeans). Allow at least 7 days between applications. However, **DO NOT** apply more than a maximum cumulative total of 25.6 fl ozs/A of **Engenia** postemergence.

Engenia® herbicide applications should be made to small (less than 4-inches tall), actively growing weeds. Sequential postemergence applications may be necessary to control new weed flushes. For best results, apply **Engenia** in a herbicide program that includes sequential application of herbicides with a different mechanism of action to control new weed growth.

Postemergence applications of **Engenia** may cause dicamba-tolerant soybeans to wilt or droop shortly after application. Symptomology is transient, and soybeans recover quickly after application.

Use with Other Herbicides

Broad-spectrum control of grass weeds or additional broadleaf weeds may require a sequential herbicide application. **Engenia** may be applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Optill®** powered by Kixor® herbicide
- **Outlook®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Raptor®** herbicide
- **Sharpen®** powered by Kixor® herbicide
- **Varisto®** herbicide
- **Verdict®** powered by Kixor® herbicide
- **Zidua®** herbicide
- **Zidua® PRO** powered by Kixor® herbicide
- clethodim (e.g. **Select Max®** herbicide)
- glyphosate (e.g. **Roundup®** herbicide)

DT Soybean Restrictions

- **DO NOT** apply **Engenia** to non-dicamba-tolerant soybean varieties other than as directed or severe soybean injury will occur; refer to **Soybean** section in **Crop-specific Information** section.
- Apply **Engenia** preplant, preemergence, and postemergence by ground only.
- **DO NOT** apply **Engenia** to soybeans after first bloom (R1).
- **DO NOT** apply **Engenia** with ammonium-containing additives, conditioners, or fertilizers (e.g. AMS, UAN).
- Use caution when tank mixing **Engenia** with approved emulsifiable concentrates (EC) or oil-based products that may increase the potential for crop injury.
- Allow at least 7 days between final application and harvest or feeding of soybean forage.
- Allow at least 14 days between final application and harvest or feeding of soybean hay.

Crop-specific Information—Conventional (non-Dicamba-tolerant) Crops

This section provides use directions for **Engenia® herbicide** in conventional (non-DT) crops; read product information, application instructions, weeds controlled, and additive instructions in preceding sections of the label. Read and follow tank mix product labels for restrictions, precautions, instructions, and crop rotation restrictions.

Depending on specific crop application directions, **Engenia** may be applied for postemergence control of emerged broadleaf weeds and/or residual control of germinating broadleaf weed seeds before crop planting (preplant and/or preseed) and after planting (preemergence, postemergence). Refer to **Table 1** for list of weeds controlled or suppressed.

Asparagus

Engenia may be applied immediately after cutting asparagus but at least 24 hours before the next cutting. Apply 6.4 to 12.8 fl ozs/A of **Engenia** in 40 to 60 gallons of diluted spray to emerged and actively growing weeds. Apply 12.8 fl ozs/A of **Engenia** to control common chickweed, field bindweed, nettleleaf goosefoot, and wild radish. To improve control of Canada thistle and field bindweed, apply **Engenia** in combination with glyphosate (e.g. **Roundup® herbicide**) or 2,4-D.

If spray contacts emerged spears, crooking (twisting) of some spears may result. If crooking occurs, discard affected spears.

Asparagus Restrictions

- **DO NOT** apply more than a total of 12.8 fl ozs/A of **Engenia** (0.5 pound dicamba ae/A) per year in asparagus.
- **DO NOT** harvest for 24 hours after treatment.
- **DO NOT** use in the Coachella Valley of California.

Between Crop Application

Engenia may be used as a burndown treatment to control broadleaf weeds at any time of the year during the fallow period following crop harvest and before the following crop is planted. Apply **Engenia** as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost, or in fallow cropland or crop stubble the following spring or summer.

Application Rates and Timings

Apply **Engenia** as a broadcast or spot treatment at 3.2 to 12.8 fl ozs/A plus recommended adjuvants; see **Adjuvants** section for details. Refer to **Table 2** to determine use rates for specific targeted weed species. For best performance, apply **Engenia** when annual weeds are less than 4-inches tall, when biennial weeds are in the rosette stage, and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. For the most

effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke, apply **Engenia** when the majority of weeds have at least 4 inches of regrowth, or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts, such as rhizomes or bulblets, after the effective period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted. For small grain in-crop uses of **Engenia**, refer to **Small Grain** section for details.

Specific crop rotation intervals must be observed between an application of **Engenia** and planting the following crop; see **Crop Rotation Restrictions** in **Use Precautions** section.

Tank Mixes

Broad-spectrum burndown control of grass weeds and/or additional broadleaf weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed with one or more of, but not limited to, the following herbicide products:

- **Distinct® herbicide**
- **Facet® L herbicide**
- **Outlook® herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- 2,4-D
- glyphosate (e.g. **Roundup**)

Between Crop Application Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia** as a between crop application.
- **DO NOT** apply more than a maximum cumulative total of 2 pounds dicamba ae/A from all product sources per cropping season.

Conservation Reserve Program (CRP)

Engenia may be used on both newly seeded and established grasses grown in the Conservation Reserve or federal Set-Aside Programs. Treatment with **Engenia** will injure or may kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Application Rates and Timings

Engenia may be applied at 3.2 to 12.8 fl ozs/A; refer to **Table 2** for rates based on target weed type and growth stage.

Newly Seeded Areas

Engenia may be applied either preplant or postemergence to newly seeded grasses or small grain such as barley,

Crop-specific Information—Conventional (non-Dicamba-tolerant) Crops *(continued)*

oats, rye, sudangrass, wheat, or other grain species grown as a cover crop. Postemergence application may be made after seedling grasses exceed the 3-leaf stage.

Preplant Intervals. Preplant applications at 12.8 fl ozs/A may injure new seedlings if the interval between application and grass planting is less than:

- 20 days - 30 inches or more annual precipitation
- 45 days - less than 30-inches annual precipitation

Established Grass Stands

Established grass stands are perennial grasses planted one or more seasons before treatment. Certain species (bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome) may show a response when treated with **Engenia® herbicide**.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet® L herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)
- paraquat (e.g. **Gramoxone® SL herbicide**)

CRP Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** per application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.

- **Engenia** may injure newly seeded grasses and certain species, such as bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome.

Corn (field, seed, silage) and Popcorn

Engenia may be applied preplant surface, preemergence, or postemergence to corn. Corn in this label refers to conventional or herbicide-tolerant field corn (grown for grain, seed, or silage) and popcorn. Before applying **Engenia** to seed corn or popcorn, verify with your local seed company (supplier) the selectivity of **Engenia** on your inbred line or hybrid to help avoid potential injury to sensitive inbreds or hybrids.

Engenia is not registered for use on sweet corn.

Engenia can be applied before crop emergence using water or sprayable fertilizer as a carrier.

Direct contact of **Engenia** with corn seed must be avoided. If corn seeds are less than 1.5 inches below the soil surface, delay application until corn has emerged.

Postemergence applications of **Engenia** to corn during periods of rapid growth may result in temporary leaning. Corn will usually become erect within 3 to 7 days. To avoid breakage, delay cultivation until after corn is growing normally.

Application Rate

Engenia application rates vary by soil texture, organic matter, and application timing. Refer to **Table 4** for **Engenia** application rates by application timing. Up to 2 applications of **Engenia** may be made during a growing season. Sequential applications must be separated by 2 weeks or more.

Table 4. Engenia Application Rates for Corn

Soil Texture	Organic Matter	Application Rate (fl ozs/A)			
		Preplant/ Preemergence ²	Preemergence	Postemergence	
		No Tillage	Conventional/ Reduced Tillage	Early ³	Late ⁴
Coarse ¹	All	6.4	NA	6.4	6.4
Medium/Fine	2.5% or less	6.4	NA	12.8	6.4
Medium/Fine	more than 2.5%	12.8	12.8	12.8	6.4

¹ Coarse soil types include sand, loamy sand, or sandy loam.

² Use only preemergence applications in conventional and reduced tillage systems.

³ Apply between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Use crop oil concentrate only in dry conditions when corn is less than 5-inches tall and when applying **Engenia** alone or tank mixed with atrazine.

⁴ Apply in corn that is 8-inches to 36-inches tall or up to 15 days before tassel emergence, whichever comes first.

NA - not applicable

Application Timing

Preplant (up to 14 days before planting) and Preemergence Applications in No Tillage Corn

Engenia® herbicide can be applied to emerged weeds before, during, or after planting a corn crop. When planting into a legume sod (e.g. alfalfa or clover), apply **Engenia** after 4 inches of regrowth. For application rates, refer to **Table 4**.

Preemergence Applications in Conventional or Reduced Tillage Corn

Engenia may be applied after planting and before corn emergence; refer to **Table 4** for application rates. Preemergence application of **Engenia** does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if the application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g. drags, harrows) that concentrates treated soil over seed furrow or seed damage could result.

Postemergence Applications (all tillage systems)

Apply early postemergence treatment between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Apply later applications when corn is 8-inches to 36-inches tall, or up to 15 days before tassel emergence, whichever comes first. Apply as a directed spray when corn leaves prevent proper spray coverage. Application rates vary by application timing; refer to **Table 4** for specific postemergence application rates.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Armezon® herbicide**
- **Armezon® PRO herbicide**
- **Outlook® herbicide**
- **Prowl® H2O herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- **Zidua® herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

NOTE: Refer to tank mix product labels to confirm the respective tank mix products are registered for use on specific corn types. Not all corn products are registered on popcorn and seed corn.

Corn and Popcorn Restrictions

- **DO NOT** use sprayable fluid fertilizer as the carrier for applications of **Engenia** made after crop emergence.

- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia**.
- **DO NOT** apply more than a maximum cumulative total of 1.5 pounds dicamba ae/A from all product sources per cropping season.
- Corn or popcorn forage and silage may be harvested, fed, or grazed when the crop has reached the ensilage (milk) stage or later in maturity.
- **Engenia is not registered for use on sweet corn.**

Cotton

Before planting cotton, **Engenia** may be used early preplant for burndown of actively growing broadleaf weeds; refer to **Table 1** for weeds controlled or suppressed.

Application Rates and Timings

Apply **Engenia** as a broadcast spray up to 6.4 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across.

Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of 21 days per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Missouri and Tennessee Only. Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of **14 days** per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Tank Mixes

Broad-spectrum postemergence control of grass weeds or additional broadleaf weeds will require a tank mix with a herbicide such as glyphosate. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Sharpen**
- glyphosate (e.g. **Roundup**)

Cotton Restrictions

- **DO NOT** apply more than 6.4 fl ozs/A (0.25 pound dicamba ae/A) of **Engenia** per year (single growing season).
- **DO NOT** apply preplant to cotton west of Interstate 25.
- **DO NOT** make **Engenia** preplant application to cotton in geographic areas with average annual rainfall less than 25 inches.

- **DO NOT** apply more than 2 pounds dicamba acid equivalent per acre for the combination of treatments if applying a spring preplant treatment following application of a fall preplant (postharvest) treatment.
- Cotton gin byproducts may be fed to livestock.

Grass Grown for Seed

Engenia® herbicide may be used to control annual and perennial broadleaf weeds after weed emergence. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Apply **Engenia** at 6.4 to 12.8 fl ozs/A plus recommended adjuvants to seedling grasses after the crop reaches 3-leaf to 5-leaf stage; see **Adjuvants** section for details. Apply up to 12.8 fl ozs/A of **Engenia** on well-established perennial grasses. Use the higher rate of the listed rate range when treating more mature weeds or dense vegetative growth.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet® L herbicide**
- **Prowl® H2O herbicide**

Grass Grown for Seed Restrictions

- **DO NOT** apply **Engenia** after grass seed crop begins to joint.
- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per application or a cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.
- Refer to **Table 5** for grazing restrictions.

Pasture, Hay, Rangeland, and Farmstead (noncropland)

Engenia may be used on pasture, hay, rangeland, and farmstead including fencerows and nonirrigation ditch-banks for control or suppression of broadleaf weed and woody brush and vine species listed in **Table 1**. **Engenia** uses described in this section also refer to small grain grown for forage pasture use (rye, sorghum, sudangrass, or wheat). Grazing and harvest intervals are shown in **Table 5**.

Engenia may also be applied to noncropland areas to control broadleaf weeds in noxious weed control programs, districts, or areas including broadcast or spot treatment of roadsides, highways, utilities, railroad, and pipeline rights-of-way. Noxious weeds must be recognized at the state level, but programs may be administered at state, county, or other level.

Application Rates and Timings

Refer to **Table 2** for rate selection based on targeted weed or brush species. Some weed species will require a tank mix partner for adequate control. Retreatments may be applied as needed.

DO NOT apply more than 25.6 fl ozs/A of **Engenia** during a growing season.

DO NOT apply more than 12.8 fl ozs/A of **Engenia** during a growing season on small grain grown for pasture and newly seeded areas.

Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response. Usually, colonial bentgrasses are more tolerant than creeping types. Velvetgrasses are most easily injured. Treatments will injure or kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Engenia can be applied using water, oil-in-water emulsions including invert systems, or sprayable fluid fertilizer as a carrier; refer to **Compatibility Test for Mix Components**.

To prepare oil-in-water emulsions, fill spray tank 1/2 full with water; then add the appropriate amount of emulsifier. Maintaining continuous agitation, slowly add herbicide and then oil (such as diesel oil or fuel oil) or a premix of oil plus additional emulsifier to spray tank. Complete filling of spray tank with water. Maintain vigorous agitation during spray operation to prevent oil and water from forming separate layers.

Spray volume may range from 3 to 600 gallons per acre. The volume of spray applied depends on the height, density, and type of weeds or brush being treated and on the type of equipment used. **Engenia** may be applied as a spot treatment to individual clumps or small areas of undesirable vegetation using a handgun or similar type of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

Table 5. Grazing and Haying Restrictions for Lactating Dairy Animals after Engenia Treatment

Engenia Rate (fl ozs/A)	Days before Grazing	Days before Hay Harvest
Up to 12.8	7	37

Cut-surface Treatment

Engenia may be applied as a cut-surface treatment for control of unwanted trees and prevention of sprouts of cut trees. Mix 1 part **Engenia** with 1 to 3 parts water to create the application solution. Use the lower dilution rate when

treating difficult-to-control species. For more rapid foliar effects, 2,4-D may be added to the solution.

- **Frill or Girdle Treatment** - Using an axe to girdle tree trunk, make a continuous cut or a series of overlapping cuts. Spray or paint the cut surface with the solution.
- **Stump Treatment** - Spray or paint freshly cut surface with the water mix. Thoroughly wet the area adjacent to the bark.

Dormant Multiflora Rose Applications

Engenia® herbicide can be applied as an undiluted spot treatment directly to the soil or as a Lo-Oil basal bark treatment using an oil-in-water emulsion solution when plants are dormant.

Spot Treatment Applications

Spot treatment application of **Engenia** should be applied directly to the soil as close as possible to the root crown within 6 inches to 8 inches of the crown. On sloping terrain, apply **Engenia** to the uphill side of the crown. **DO NOT** apply when snow or water prevents applying **Engenia** directly to the soil. The use rate of **Engenia** depends on the canopy diameter of the multiflora rose.

Example Engenia use rates:

- 0.25 fl oz per 5-foot canopy diameter
- 1.0 fl oz per 10-foot canopy diameter
- 2.35 fl ozs per 15-foot canopy diameter

Lo-Oil Basal Bark Treatment

For Lo-Oil basal bark treatments, apply **Engenia** to the basal stem region from the ground line to a height of 12 inches to 18 inches. Spray until runoff, with special emphasis on covering the root crown. For best results, apply **Engenia** when plants are dormant.

- **DO NOT** apply after bud break or when plants are showing signs of active growth.
- **DO NOT** apply when snow or water prevents applying **Engenia** to the ground line.

Lo-Oil Spray Solution Preparation

1. Combine 1.5 gallons of water, 1 oz of emulsifier, 12.8 fl ozs of **Engenia**, and 2.5 pints of No. 2 diesel fuel.
2. Adjust the amounts of materials used proportionately to the amount of final spray solution desired.

DO NOT apply more than 8 gallons/A of Lo-Oil spray solution mix per year.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Frequency® herbicide**

Pasture, Hay, Rangeland, and Farmstead (noncropland) Restrictions

- **DO NOT** apply more than a maximum cumulative total of 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) during a growing season.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) to small grain grown for pasture and to newly seeded areas.

Proso Millet

For use only within Colorado, Nebraska, North Dakota, South Dakota, and Wyoming

Engenia combined with 2,4-D will provide control or suppression of annual broadleaf weeds; see **Table 1**.

Apply 3.2 fl ozs/A of **Engenia** with 0.375 lb acid equivalent of 2,4-D per acre. Apply the tank mix of **Engenia** plus 2,4-D as a broadcast or spot treatment to emerged and actively growing weeds and when proso millet is in the 2-leaf to 5-leaf stage. Use directions for 2,4-D products vary with manufacturers; refer to a 2,4-D product with labeling consistent with the crop-stage timing for **Engenia**. Some types of proso millet may be affected adversely by a tank mix of **Engenia** plus 2,4-D.

Proso Millet Restrictions

- **DO NOT** apply unless possible proso millet crop injury will be acceptable.
- **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) per season in proso millet.
- Refer to **Table 5** for grazing restrictions.

Small Grain (barley, oats, triticale, and wheat)

Engenia may be applied before, during, or after planting small grain (barley, oats, triticale, and wheat). Refer to **Application Rates and Timings** for specific small grain crop uses. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. **Engenia** can be applied using water or sprayable fertilizer as a carrier. Applying **Engenia** to small grain during periods of rapid growth may result in crop leaning; this condition is temporary and will not reduce crop yield.

Restrictions for small grain areas grazed or cut for hay are indicated in **Table 5** in **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section of this label.

Application Rates and Timings

Early Season Applications

Table 6. Early Season Application Rate and Growth Stage in Small Grain¹

Crop	Fall-seeded		Spring-seeded	
	Rate (fl ozs/A)	Growth Stage	Rate (fl ozs/A)	Growth Stage (up to)
Barley ^{2,3}	1.6 to 3.2	before joint	1.6 to 2.4	4-leaf
Oats ³			1.6 to 3.2	5-leaf
Triticale			1.6 to 3.2	6-leaf
Wheat ⁴			1.6 to 3.2	6-leaf

¹ An adjuvant system should be used with all **Engenia® herbicide** applications; refer to **Adjuvants** section for details. **DO NOT** use oil concentrates for postemergence in-crop application.

² For spring barley varieties seeded during winter months or later, follow the rate and timing given for spring-seeded barley.

³ **DO NOT** tank mix **Engenia** with 2,4-D in oats or early season application on spring-seeded barley.

⁴ Early developing wheat varieties must receive application between early tillering and the joint stage; ensure that the application occurs before the jointing stage.

Fall-seeded Wheat ONLY

Western Oregon. When applied in the spring, **Engenia** may be used at rates up to 4.8 fl ozs/A on fall-seeded wheat. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury.

Colorado, Kansas, New Mexico, Oklahoma, and Texas. For suppression of perennial weeds (such as field bindweed), up to 6.4 fl ozs/A of **Engenia** may be applied on fall-seeded wheat after wheat exceeds the 3-leaf stage. Application may be made in the fall following a frost but before a killing freeze. **Engenia** at 6.4 fl ozs/A may be tank mixed with MCPA after wheat begins to tiller. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, **DO NOT** apply **Engenia** if the potential for crop injury is unacceptable.

Preharvest Applications

To control broadleaf weeds that interfere with harvest, **Engenia** may be applied before harvest when barley or wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if the application can be made when weeds are actively growing but before weeds canopy.

Engenia applications may be made to fall-planted and spring-planted barley and wheat at 6.4 fl ozs/A as a broadcast application or spot treatment. A preharvest interval (PHI) of 7 days is required before crop harvest.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Beyond® herbicide** (for **Clearfield®** wheat and **Clearfield® Plus** wheat only)
- **Clearmax® herbicide** (for **Clearfield** wheat and **Clearfield Plus** wheat only)
- **Sharpen® powered by Kixor® herbicide**
- **Zidua® herbicide**
- 2,4-D amine
- MCPA
- sulfonylurea-based herbicide (e.g. **Ally® herbicide**, **Express® herbicide**, **Finesse® herbicide**)

Small Grain Restrictions

- **Maximum use rate per application**
 - 3.2 fl ozs/A: Oats and triticale
 - 6.4 fl ozs/A: Spring-seeded barley, fall-seeded barley, wheat
- **Maximum seasonal use rate**
 - 3.2 fl ozs/A: Oats and triticale
 - 8.8 fl ozs/A: Spring-seeded barley
 - 9.6 fl ozs/A: Fall-seeded barley
 - 12.8 fl ozs/A: Wheat
- **DO NOT** apply **Engenia** preharvest to oats or triticale.
- **DO NOT** use oil concentrate for postemergence in-crop application.
- **DO NOT** use preharvest-treated barley or wheat for seed unless a germination test with an acceptable result of 95% germination or more is performed on the seed.
- **DO NOT** graze small grain (barley, oats, triticale, wheat) within 7 days after treatment.
- **DO NOT** harvest for hay within 37 days after treatment.
- Barley and wheat may be harvested 7 days or more after a preharvest application.
- **DO NOT** make preharvest application in California.

Sorghum

Engenia may be used early preplant, postemergence, and preharvest in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

A preplant application of **Engenia**® herbicide up to 6.4 fl ozs/A may be applied at least 14 days before sorghum planting. **Engenia** can be applied using water or sprayable fertilizer as a carrier.

Postemergence Applications

Up to 6.4 fl ozs/A of **Engenia** plus recommended adjuvants (refer to **Adjuvants** section for details) may be applied after sorghum is in the spike stage (all sorghum emerged) but before sorghum is 15-inches tall. For best performance, apply **Engenia** when sorghum crop is in the 3-leaf to 5-leaf stage and weeds are small (less than 3-inches tall). Use drop nozzles if sorghum is taller than 8 inches. Keep spray off sorghum leaves and out of the whorl to reduce the likelihood of crop injury and to improve spray coverage of weed foliage.

Applying **Engenia** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10 to 14 days.

Preharvest Applications

Oklahoma and Texas ONLY

Up to 6.4 fl ozs/A of **Engenia** may be applied for weed suppression any time after sorghum has reached the soft-dough stage. An agriculturally approved surfactant may be used to improve performance; see **Adjuvants** section for details. Delay harvest until 30 days after a preharvest treatment.

Split Applications

Engenia may be applied in split applications: preplant followed by postemergence or preharvest; or postemergence followed by preharvest. **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** per application, or a maximum cumulative total of 12.8 fl ozs/A of **Engenia** per year.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Basagran**® 5L herbicide
- **Facet**® L herbicide
- **Outlook**® herbicide - (Preplant only)
- **Sharpen**® powered by **Kixor**® herbicide
- **Verdict**® powered by **Kixor**® herbicide
- atrazine
- glyphosate (e.g. **Roundup**® herbicide)

Sorghum Restrictions

- **DO NOT** graze or feed treated sorghum forage or silage before mature grain stage. If sorghum is grown for pasture or hay, refer to **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section for specific grazing and feeding restrictions.
- **DO NOT** apply **Engenia** to sorghum grown for seed production.
- **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** (0.25 lb dicamba ae/A) per application.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per season.
- **Oklahoma and Texas only** - Delay harvest until 30 days after a preharvest treatment.

Soybean (non-dicamba-tolerant)

Engenia may be used preplant or preharvest in soybean to control many annual broadleaf weeds and to reduce competition from established biennial and perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

Apply **Engenia** as a broadcast spray at 3.2 to 12.8 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details.

Preplant Intervals. Following application of **Engenia** and a minimum accumulation of 1 inch of rainfall or overhead irrigation, preplant waiting intervals are required before planting soybeans or crop injury may occur:

- **14 days** for 3.2 to 6.4 fl ozs/A
- **28 days** for 6.5 to 12.8 fl ozs/A

Preharvest Applications

Apply **Engenia** as a broadcast spray or spot spray at 6.4 to 12.8 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details. Applications should be made to emerged and actively growing weeds after soybean pods have reached mature brown color and at least 75% leaf drop has occurred.

Treatments may not kill weeds that later develop from seed or underground parts, such as rhizomes or bulblets, after the effective residual period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted.

Tank Mixes

Engenia® herbicide may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Optill®** powered by **Kixor®** herbicide
- **Outlook®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Raptor®** herbicide
- **Sharpen®** powered by **Kixor®** herbicide
- **Verdict®** powered by **Kixor®** herbicide
- **Zidua®** herbicide
- **Zidua® PRO** powered by **Kixor®** herbicide
- glyphosate (e.g. **Roundup®** herbicide)

Soybean Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) in a spring application before soybean planting.
- **DO NOT** make **Engenia** preplant application to soybeans in geographic areas with average annual rainfall less than 25 inches.
- **DO NOT** apply more than 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year (single growing season).
- **DO NOT** use preharvest-treated soybean for seed unless a germination test with an acceptable result of 95% germination or better is performed on the seed.
- **DO NOT** harvest soybeans until 7 days after a preharvest application.
- **DO NOT** feed soybean fodder or hay following preharvest application of **Engenia**.
- **DO NOT** make preharvest applications in California.

Sugarcane

Engenia may be used any time after weed emergence but before the close-in stage of sugarcane to control many annual and perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed.

Apply 6.4 to 12.8 fl ozs/A of **Engenia** for control of annual weeds and 12.8 fl ozs/A for control or suppression of biennial and perennial weeds. Use the higher rate of the specified rate range when treating dense vegetative growth. Repeat treatment may be made as needed; however, **DO NOT** apply more than the annual maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A).

When possible, direct the spray beneath the sugarcane canopy to minimize the likelihood of crop injury. Using directed sprays will also help maximize the spray coverage of weed foliage.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Prowl H2O**
- atrazine

Sugarcane Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (1 lb dicamba ae/A) in a single application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per growing season.
- **DO NOT** harvest sugarcane until 87 days after application.

Farmstead Turf (noncropland) and Sod Farms

Engenia may be used in farmstead turf (noncropland) and sod farms to control or suppress growth of many annual, biennial, and some perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed. **Engenia** will also suppress woody brush and vine species; refer to **Table 2** for application rates based on targeted weed or woody brush and vine species and growth stage. Some weed species will require tank mixes for optimum control.

Repeat treatment may be made as needed; however, **DO NOT** apply more than 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) per growing season.

Apply 30 to 200 gallons of diluted spray per acre (3 to 17 quarts of water per 1000 sq ft), depending on density or height of weeds treated and on type of equipment used.

To avoid injury to newly seeded grasses, delay application of **Engenia** until after the second mowing. Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response.

Tank Mixes

Engenia at 3.2 to 12.8 fl ozs/A may be tank mixed with one or more of, but not limited to, the following herbicide products:

- **Drive® XLR8** herbicide
- **Pendulum®** herbicide
- **Tower®** herbicide
- 2,4-D
- MCPA
- MCPP

Farmstead Turf and Sod Farm Restrictions

- **DO NOT** use on residential sites.
- **DO NOT** apply more than 25.6 fl ozs/A of **Engenia® herbicide** (1 lb dicamba ae/A) per growing season.
- **Areas where Roots of Sensitive Plants Extend**
 - **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) on coarse-texture soils (sand, loamy sand, or sandy loam).
 - **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** on fine-texture soils.
 - **DO NOT** make repeat applications in these areas for 30 days and until previous applications of **Engenia** have been activated in the soil by rainfall or irrigation.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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Armezon, Basagran, Beyond, Clearfield, Clearmax, Distinct, Drive, Engenia, Facet, Frequency, Kixor, Optill, Outlook, Pendulum, Prowl, Pursuit, Raptor, Sharpen, Tower, Varisto, Verdict, and Zidua are registered trademarks of BASF.

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007969-00345.20171004.**NVA 2017-04-385-0200**

Supersedes: NVA 2012-04-385-0062

Supplementals: NVA 2016-04-385-0297

NVA 2016-04-385-0300

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

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Message

From: Craig D Kleppe [craig.kleppe@basf.com]
Sent: 4/23/2018 5:36:29 PM
To: Baris, Reuben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a0181e3f02a246fc915a4af026e249fc-Baris, Reuben]
Subject: RE: 7969-279 label comments
Attachments: 007969-00279.20170828b.NVA 2017-04-320-0031.pdf

Reuben,

Please see attached the revised "b" version of Verdict master label. Per your request, the following changes have been made:

- 1) Added AI names to MOA banner on front page
- 2) Added additional Herbicide Resistance Management language to section to align with HRM principles in 2017 PR Notices
- 3) Changed "sensitive areas" to "nontarget areas" in the wind speed paragraph for ground applications.

I also reply to your other inquiries in the label (but no changes made). My rebuttal is necessary because I don't think any further text changes are warranted.

- 1) Buffer zones tables – In the last master label amendment for Saflufenacil base product, Kay Montague requested that I drop the rate X buffer table because we list only the maximum buffer zone on the container label. So following in-line with Kay's request on other Saflufenacil products, we simplified and only list maximum rate buffer zones for Verdict.
- 2) Buffer zone statement – For Saflufenacil's registration in 2009, EFED and Kay established the BZ statements to move toward protecting all nontarget areas from spray drift instead of only endangered species. The distances are calculated via AgDrift model to be protective from edge of field. The label language has been successful, as we have had very few spray drift complaints with Saflufenacil products over the years. No need to further complicate the spray drift language of this product, it is definitely not in the same category as dicamba.
- 3) Rotational crop intervals – for both AIs Saflufenacil and Dimethenamid-P, the minimum rot crop interval to non-registered crops to avoid inadvertent residues is 4 months. Verdict use rates differ across soil types but the average rate is ~19 fl oz/A for preemergence residual applications. Verdict also used for preplant burndown apps but at lesser rates. So the "<19" category does 2 things, it covers the 4 month interval for non-registered crops and where applicable it aligns with rot crop intervals according to solo Saflufenacil label. Any rot crop interval greater than 4 months (in both rate columns) are BASF self-imposed to protect from any potential crop injury to sensitive follow crops, i.e., liability management. In the Herbicide Resistance Management section, we only mention "follow labeled rates", not maximum, so there is no contradiction.
- 4) NOTE in corn section is needed because of the other types of Corn (sweet, pop, seed, etc.) listed for use with Verdict. In other crop sections, the NOTE is not applicable because only one crop type is mentioned there (i.e., grain sorghum, fallow, soybean).

I appreciate your attention to this label. I need a stamped version ASAP.

P.S. Because our master label amendments are submitted to EPA according to print and production schedules, we need to adjust our timelines to stay on schedule. It seems now that EPA is not able to keep a 90-day review period for fast-track amendments because of the back log and staffing issues, so what is your guidance back to registrants on the practical review time for fast tracks ?? 6 or 9 months ?? Please advise. Thanks.

Regards
Craig Kleppe
Product Registration Manager

Phone: +1 919 547-2615 Mobile: +1-919-225-9261 Fax: +1 919 547-2850 E-Mail: craig.kleppe@basf.com
Postal Address: BASF Corporation, 26 Davis Drive, P.O. Box 13528, Research Triangle Park, NC 27709, USA

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From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]

Sent: Friday, April 20, 2018 4:28 PM

To: Craig D Kleppe <craig.kleppe@basf.com>

Subject: 7969-279 label comments

Hi Craig,

Sorry for the delays on this. If you can turn these comments around without much rebuttal I can make the time for the approval.

Let me know if you have any questions.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH

U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

Verdict®

Powered by Kixor® Herbicide

For use in field corn (grain, seed, silage), popcorn, processing sweet corn, grain sorghum, and soybean

Active Ingredients*:

saflufenacil: N'-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide 6.24%

dimethenamid-P: (S)-(2-chloro-N-[(1-methyl-2-methoxy)ethyl]-N-(2,4-dimethyl-thien-3-yl)-acetamide) 55.04%

Other Ingredients:** 38.72%

Total: 100.00%

* Contains 0.57 pound of saflufenacil and 5.0 pounds of dimethenamid-P per gallon, formulated as an emulsifiable concentrate

** Contains petroleum distillates

EPA Reg. No. 7969-279

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN
WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes; then continue rinsing. • Call a poison control center for treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • DO NOT induce vomiting unless told to by a poison control center or doctor. • DO NOT give any liquid to the person. • DO NOT give anything to an unconscious person.
If on skin	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	
Note to Physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.	

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed. **DO NOT** get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, or nitrile rubber ≥ 14 mils. Replace gloves after 8 hours of use (either continuous or intermittent). Thoroughly rinse gloves with water between intermittent uses.
- Protective eyewear (face shield, goggles, or safety glasses)

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for **applicators and other handlers** and have such PPE immediately available for use in an emergency, including a spill or equipment breakdown.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

For terrestrial uses, **DO NOT** apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Groundwater Advisory. Saflufenacil has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. Dimethenamid-P has properties that may result in groundwater contamination. Application in areas where soils are permeable or coarse and groundwater is near the surface could result in groundwater contamination.

Surface Water Advisory. This product may impact surface water due to runoff of rainwater. This is especially true

for poorly draining soils and soils with shallow groundwater. This product is classified as having high potential for reaching surface water via runoff for several weeks after application. A level, well-maintained buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of this chemical from runoff water and sediment. Runoff of this product will be reduced by avoiding application when rainfall is forecast to occur within 48 hours.

Point-source Contamination. To prevent point-source contamination, **DO NOT** mix or load this or any other pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or dike mixing/loading areas described as follows.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing and/or loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent:

- Back-siphoning into wells
- Spills
- Improper disposal of excess pesticide, spray mixes, or rinsates

Check valves or anti-siphoning devices must be used on all mixing equipment.

Movement Dissolved in Runoff or Through Soil.

DO NOT apply under conditions that favor runoff.

DO NOT apply to impervious substrates including paved or highly compacted surfaces or frozen soils. Groundwater contamination may occur in areas where soils are permeable or coarse and groundwater is near the surface. To minimize the possibility of groundwater contamination, carefully follow application rate specifications as affected by soil type in the **Application Instructions** section of this label. **DO NOT** apply if all 3 criteria exist:

1. Coarse soils classified as sand (does not include loamy sand or sandy loam)
2. Less than 3% organic matter (as determined by soil tests, if not known)
3. Where depth to groundwater is 30 feet or less

Movement by Water Erosion of Treated Soil. DO NOT apply or incorporate this product by flood or furrow irrigation. Ensure treated areas have received at least 1/2 inch of rainfall before using tailwater for subsequent irrigation of other fields.

Endangered Species Protection Requirements

This product may have effects on federally listed threatened or endangered plant species or their critical habitat. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain that Bulletin, consult <http://www.epa.gov/espp/>, or call 1-844-447-3813 no more than 6 months before using this product. Applicators must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will generally be available from the above sources 6 months before their effective dates.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at time of herbicide application.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Observe all restrictions and precautions in this label and the labels of products used in combination with **Verdict® herbicide**. The use of **Verdict** not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions, and **Conditions of Sale and Warranty** are to be followed.

BASF Corporation does not recommend or authorize the use of this product in manufacturing, processing, or preparing custom blends with other products for application in crops.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours**.

EXCEPTION: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils
- Shoes plus socks
- Protective eyewear

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

DO NOT use or store near heat or open flame. Store in original container in a well ventilated area separately from fertilizer, feed, or foodstuffs and away from other pesticides. Avoid cross-contamination with other pesticides. Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

Pesticide Disposal

Wastes resulting from this product must be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake

(capacity \leq 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake

(capacity $>$ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(continued)*

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage including cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

Product Information

Verdict® herbicide is a selective residual preemergence herbicide for controlling most annual grass weeds, annual broadleaf weeds, and sedges in field corn, popcorn, processing sweet corn, grain sorghum, and soybean (refer to **Table 1** for a list of weeds controlled preemergence). Residual preemergence application of **Verdict** must be activated by at least 1/2 inch of rainfall or sprinkler irrigation before weed seedling emergence. When **Verdict** is not activated, a labeled postemergence herbicide or cultivation may be needed to control weed escapes.

Verdict also provides contact burndown of many broadleaf weeds (refer to **Table 2** for a list of weeds controlled by a burndown application). An adjuvant (refer to **Additives** section for details) is required with **Verdict** for optimum broadleaf burndown activity. Burndown application of **Verdict** should be made when broadleaf weeds are small and actively growing. Burndown activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions, or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger broadleaf weeds, use a higher application rate within an application rate range and/or higher spray volumes. Angling nozzles forward (to 45 degrees) may improve penetration of denser weed canopies.

Tank mixes with contact herbicides (e.g. carfentrazone, paraquat) may reduce the burndown activity of **Verdict**.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to take if material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Table 1. Weeds Controlled by a Residual Preemergence Application of Verdict® herbicide

Common Name	Scientific Name	C = Control S = Suppression¹
Annual Broadleaf Weeds		
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C
Buckwheat, wild	<i>Polygonum convolvulus</i>	C
Buffalobur	<i>Solanum rostratum</i>	C
Burcucumber	<i>Sicyos angulatus</i>	S
Canola, volunteer (rapeseed), all types	<i>Brassica</i> spp.	C
Carpetweed	<i>Mollugo verticillata</i>	C
Chamomile, mayweed	<i>Anthemis cotula</i>	C
Chickweed, common	<i>Stellaria media</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	C
Copperleaf, Virginia	<i>Acalypha virginica</i>	C
Devil's-claw	<i>Proboscidea louisiana</i>	S
Eclipta	<i>Eclipta prostrata</i>	S
Fleabane, hairy	<i>Conyza bonariensis</i>	C
Galinsoga, smallflower	<i>Galinsoga parviflora</i>	C
Groundcherry, cutleaf	<i>Physalis angulata</i>	C
Horseweed (marestail)	<i>Conyza canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C
Kochia	<i>Kochia scoparia</i>	C
Ladysthumb	<i>Polygonum persicaria</i>	C
Lambsquarters, common	<i>Chenopodium album</i>	C
Mallow, Venice	<i>Hibiscus trionum</i>	C
Marestail (horseweed)	<i>Conyza canadensis</i>	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	C
Morningglory, palmleaf	<i>Ipomoea wrightii</i>	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	C
Morningglory, tall	<i>Ipomoea purpurea</i>	C
Mustard, wild	<i>Sinapis arvensis</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, cutleaf	<i>Solanum triflorum</i>	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Pennycress, field	<i>Thlaspi arvense</i>	C
Pigweed, prostrate	<i>Amaranthus blitoides</i>	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pigweed, tumble	<i>Amaranthus albus</i>	C
Puncturevine	<i>Tribulus terrestris</i>	S
Purslane, common	<i>Portulaca oleracea</i>	C

(continued)

Table 1. Weeds Controlled by a Residual Preemergence Application of Verdict® herbicide (continued)

Common Name	Scientific Name	C = Control S = Suppression ¹
Annual Broadleaf Weeds (continued)		
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	C
Sida, prickly	<i>Sida spinosa</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Sowthistle, annual	<i>Sonchus arvensis</i>	C
Spurge, nodding	<i>Chamaesyce nutans</i>	C
Spurge, spotted	<i>Chamaesyce maculata</i>	C
Starbur, bristly	<i>Acanthospermum hispidum</i>	C
Sunflower, common	<i>Helianthus annuus</i>	C
Thistle, Russian	<i>Salsola kali</i>	C
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp	<i>Amaranthus tuberculatus</i>	C
Annual Grass Weeds		
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Bluegrass, annual	<i>Poa annua</i>	C
Bluegrass, roughstalk	<i>Poa trivialis</i>	C
Brome, California	<i>Bromus carinatus</i>	C
Brome, downy	<i>Bromus tectorum</i>	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C
Crabgrass, smooth	<i>Digitaria ischaemum</i>	C
Cupgrass, Southwestern	<i>Eriochloa gracilis</i>	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	S
Fescue, rattail	<i>Vulpia myuros</i>	C
Foxtail, giant	<i>Setaria faberi</i>	C
Foxtail, green	<i>Setaria viridis</i>	C
Foxtail, yellow	<i>Setaria pumila</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	S
Millet, wild proso	<i>Panicum miliaceum</i>	S
Panicum, fall	<i>Panicum dichotomiflorum</i>	C
Panicum, Texas	<i>Panicum texanum</i>	S
Rice, red	<i>Oryza sativa</i>	C
Ryegrass, Italian	<i>Lolium multiflorum</i>	C
Sandbur	<i>Cenchrus</i> spp.	S
Shattercane	<i>Sorghum bicolor</i>	S
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	S
Witchgrass	<i>Panicum capillare</i>	C
Sedges		
Flatsedge, rice	<i>Cyperus iria</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	S

¹To complement control, **Verdict** should be used in tank mixes or sequential applications with other labeled herbicides that provide additional control of noted weeds.

Table 2. Broadleaf Weeds Controlled by a Burndown Application of Verdict® herbicide

Common Name	Scientific Name	C = Control S = Suppression	Maximum Height or Diameter (inches)
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C	6
Bedstraw, catchweed	<i>Galium aparine</i>	C	3
Beggarticks, hairy	<i>Bidens pilosa</i>	C	6
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	6
Bindweed, field	<i>Convolvulus arvensis</i>	S ¹	6
Buckwheat, wild	<i>Polygonum convolvulus</i>	C	3
Canola, volunteer (rapeseed)	<i>Brassica</i> spp.	C	6
Carpetweed	<i>Mollugo verticillata</i>	C	6
Chickweed, common	<i>Stellaria media</i>	S	3
Cocklebur, common	<i>Xanthium strumarium</i>	C	6
Cotton, volunteer	<i>Gossypium hirsutum</i>	C	growing from seed, ≤ 6 leaves
Cowcockle	<i>Vaccaria pyramidata</i>	C	4
Dandelion	<i>Taraxacum officinale</i>	S ¹	6
Eveningprimrose, cutleaf	<i>Oenothera laciniata</i>	C	4
Falsesflax, smallseed	<i>Camelina microcarpa</i>	C	4
Filaree, broadleaf	<i>Erodium botrys</i>	C	4
Filaree, redstem	<i>Erodium cicutarium</i>	S	3
Filaree, whitestem	<i>Erodium moschatum</i>	C	4
Fleabane, hairy	<i>Conyza bonariensis</i>	C	6
Flixweed	<i>Descurainia sophia</i>	C	6
Goosefoot, nettleleaf	<i>Chenopodium murale</i>	C	3
Groundcherry, cutleaf	<i>Physalis angulata</i>	C	6
Groundsel, common	<i>Senecio vulgaris</i>	C	4
Hawksbeard, narrowleaf	<i>Crepis tectorum</i>	C	6
Hemlock, poison	<i>Conium maculatum</i>	C	6
Henbit	<i>Lamium amplexicaule</i>	S	3
Horseweed (maretail)	<i>Conyza canadensis</i>	C	6
Knotweed, prostrate	<i>Polygonum aviculare</i>	C	3
Kochia	<i>Kochia scoparia</i>	C	3
Ladysthumb	<i>Polygonum persicaria</i>	C	6
Lambsquarters, common	<i>Chenopodium album</i>	C	6
Lambsquarters, narrowleaf	<i>Chenopodium pratericola</i>	C	6
Lettuce, miner's	<i>Claytonia perfoliata</i>	C	6
Lettuce, prickly	<i>Lactuca serriola</i>	C	6
Mallow, common	<i>Malva neglecta</i>	C	6
Mallow, little (cheeseweed)	<i>Malva parviflora</i>	C	6
Mallow, Venice	<i>Hibiscus trionum</i>	C	6
Maretail (horseweed)	<i>Conyza canadensis</i>	C	6
Morningglory, entirleaf	<i>Ipomoea hederacea</i> var. <i>integriscula</i>	C	6
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	C	6

(continued)

Table 2. Broadleaf Weeds Controlled by a Burndown Application of Verdict® herbicide (continued)

Common Name	Scientific Name	C = Control S = Suppression	Maximum Height or Diameter (inches)
Morningglory, pitted	<i>Ipomoea lacunosa</i>	C	6
Morningglory, tall	<i>Ipomoea purpurea</i>	C	6
Mustard, black	<i>Brassica nigra</i>	C	6
Mustard, tumble	<i>Sisymbrium altissimum</i>	C	6
Mustard, wild	<i>Sinapis arvensis</i>	C	6
Nettle, burning	<i>Urtica urens</i>	C	4
Nightshade, black	<i>Solanum nigrum</i>	C	6
Nightshade, cutleaf	<i>Solanum triflorum</i>	C	6
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C	6
Nightshade, hairy	<i>Solanum saccharoides</i>	C	6
Parthenium	<i>Parthenium hysterophorus</i>	C	6
Pennycress, field	<i>Thlaspi arvense</i>	C	6
Pigweed, prostrate	<i>Amaranthus blitoides</i>	C	6
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	6
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	6
Puncturevine	<i>Tribulus terrestris</i>	C	6
Purslane, common	<i>Portulaca oleracea</i>	C	3
Pusley, Florida	<i>Richardia scabra</i>	S	3
Ragweed, common ²	<i>Ambrosia artemisiifolia</i>	C	6
Ragweed, giant	<i>Ambrosia trifida</i>	C	6
Rocket, London	<i>Sisymbrium irio</i>	C	6
Sesbania, hemp	<i>Sesbania exaltata</i>	C	4
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C	6
Sida, prickly	<i>Sida spinosa</i>	C	6
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	6
Sowthistle, annual	<i>Sonchus oleraceus</i>	C	6
Sowthistle, spiny	<i>Sonchus asper</i>	C	6
Spurge, garden	<i>Chamaesyce hirta</i>	C	6
Spurge, prostrate	<i>Chamaesyce humistrata</i>	C	6
Spurge, spotted	<i>Chamaesyce maculata</i>	C	6
Sunflower, common	<i>Helianthus annuus</i>	C	6
Tansymustard, green	<i>Descurainia incana</i>	C	6
Tansymustard, pinnate	<i>Descurainia pinnata</i>	C	6
Thistle, Canada	<i>Cirsium arvense</i>	S ¹	6
Thistle, Russian	<i>Salsola kali</i>	C	3
Velvetleaf	<i>Abutilon theophrasti</i>	C	6
Waterhemp ²	<i>Amaranthus tuberculatus</i>	C	6
Willowweed	<i>Epilobium adenocaulon</i>	C	3

¹ Control of seedling stage and suppression of perennial growth stage² Populations of noted weeds exist that are known to be resistant to burndown applications of **Group 14/Group E** herbicides and will not be controlled by herbicides like **Verdict**. See the **Resistance Management** section for practices to manage and minimize the impact of resistant weeds (e.g. tank mixes or alternation with other herbicide modes of action, crop rotation, and mechanical control).

Mode of Action

Verdict® herbicide combines two active ingredients: saflufenacil, a potent inhibitor of protoporphyrinogen-oxidase belonging to herbicide mode-of-action

Group 14 (WSSA)/Group E (HRAC), and dimethenamid-P, a chloroacetamide belonging to the herbicide mode-of-action **Group 15/Group K₃**. Saflufenacil is rapidly absorbed by roots and foliage. Following inhibition of the protoporphyrinogen-oxidase, plant death is the result of membrane damage. Under active growing conditions, susceptible emerging weed seedlings usually develop chlorotic and necrotic injury symptoms within hours and die within a few days. Susceptible germinating weed seeds usually die as they reach the soil surface or shortly after emergence. Dimethenamid-P is a root-and-shoot inhibitor that controls susceptible weed seedlings before or soon after they emerge from the soil.

Herbicide Resistance Management

While weed resistance to protoporphyrinogen-oxidase-inhibiting herbicides is relatively infrequent, populations of resistant biotypes are known to exist. Resistance management should be part of a diversified weed control strategy that integrates chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, proper fertilizer placement, and optimum seeding rate/row spacing. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant weeds. Herbicide resistance management practices should be considered and include:

Chemical Control

1. Start clean with tillage or an effective burndown herbicide program.
2. **DO NOT** rely on a single herbicide site of action for weed control.
3. Follow labeled application rate and weed growth stage specifications.
4. Avoid application of herbicides with the same site of action more than twice a season.
5. Use tank mixes and sequential applications with other herbicides possessing different sites of action that are also effective on the target weeds.
6. Use crop rotation so crop competition, tillage, or herbicides with alternative modes of action can be used to control weed escapes.

Scouting and Containment

1. Scout fields after herbicide application to identify areas where weed control was ineffective.
2. Control weed escapes with herbicides possessing a different site of action or use a mechanical control measure. Weed escapes should not be allowed to reproduce by seed or to proliferate vegetatively.
3. Contact your **Verdict** supplier and/or your local BASF representative to report weed escapes.
4. Clean equipment before moving to a different field to avoid spread of resistant weeds.

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended.

Crop Tolerance

Field corn, popcorn, processing sweet corn, grain sorghum, and soybean are tolerant to **Verdict** when applied according to label directions as a preplant to preemergence treatment and under normal environmental conditions. Crop injury may occur under stressful growing conditions (e.g. low soil fertility, seedling disease, extreme hot or cold weather, excessive moisture, high soil pH, high soil salt concentration, or drought).

Severe crop injury will result if **Verdict** is applied postemergence (over the top) to corn, sorghum, or soybean.

Application Instructions

Verdict may be applied preplant surface, preplant incorporated, or preemergence to field corn, popcorn, processing sweet corn, grain sorghum, and soybean. Apply **Verdict** only before crop emergence.

Rainfastness - Verdict is rainfast 1 hour after application. Burndown activity may be reduced if rain or irrigation occurs within 1 hour of application.

Application Rate

Application rates of **Verdict** for residual preemergence weed control may vary depending on soil texture and organic matter. Refer to **Table 3** for soil texture groups used in this label.

Table 3. Soil Texture Groups

Coarse	Medium	Fine
Sand	Silt	Sandy clay
Loamy sand	Silt loam	Silty clay
Sandy loam	Loam	Silty clay loam
	Sandy clay loam	Clay loam
		Clay

Refer to the **Crop-specific Information** section for specific application directions and the restrictions and precautions by crop use and pattern.

Application Methods and Equipment

Verdict may be applied by ground or air. Thorough spray coverage is important for optimum weed control and can be improved with proper adjuvant, nozzle, and spray volume selection.

Use and configure application equipment to provide an adequate spray volume, an accurate and uniform distribution of spray droplets over the treated area, and to avoid spray drift to nontarget areas. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that increase rates above the use rates specified in this label.

Verdict® herbicide may be applied using water or sprayable fluid nitrogen fertilizer solutions as the spray carrier. Additionally, **Verdict** may be impregnated on and applied with dry bulk fertilizer.

Aerial Application Requirements

Water Volume. Use 3 or more gallons of water per acre.

Applicators must follow these requirements to reduce the potential of spray drift to nontarget areas from aerial applications:

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the fixed wingspan or 90% of rotor blade diameter.
2. Use low-drift nozzles (straight-stream nozzles, D-8 or larger). **DO NOT** use nozzles producing a mist droplet spray.
3. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.
4. Without compromising aircraft safety, application must be made at a height of 10 feet or less above the crop canopy or tallest plants.
5. **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.
6. Avoid potential adverse effects to nontarget areas by maintaining a 120-foot buffer between the point of direct application and the **closest downwind edge** of sensitive terrestrial habitats (grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Ground Application Requirements

Spray Carrier Volume. Use 3 or more gallons of water per acre or 20 or more gallons of sprayable fluid fertilizer per acre. Thorough coverage of existing vegetation is essential for burndown applications and higher spray volumes may be necessary for better performance.

Applicators must follow these requirements to reduce the potential of spray drift to nontarget areas from ground applications:

1. Apply this product using nozzles that deliver **medium-to-coarse spray droplets** as defined by ASAE standard S-572 and as shown in nozzle manufacturer's catalogs. Flat-fan nozzles are recommended for burndown applications while flood-jet type nozzles are recommended for residual soil surface applications. Nozzles that deliver coarse spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain coverage of target (i.e. weeds or soil surface). **DO NOT** use nozzles that produce fine (e.g. cone) spray droplets.
2. Apply this product only when the potential for drift to adjacent nontarget areas is minimal (e.g. when the wind is **10 MPH or less and is blowing away** from nontarget areas). **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.

3. Avoid potential adverse effects to nontarget areas by maintaining a 60-foot buffer between the application area and the **closest downwind edge** of sensitive terrestrial habitats (grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Ground Application (dry bulk fertilizer)

Verdict may be impregnated or coated onto dry bulk granular fertilizer carriers for residual soil surface application. Impregnation or coating may be conducted by in-plant bulk or on-board systems. Perform the mixing operation in well-ventilated areas.

Addition of a drying agent may be necessary if the fertilizer and herbicide blend is too wet for uniform application because of high humidity, high urea concentration, or low fertilizer use rate. Slowly add the drying agent to the blend until a flowable mixture is obtained. Drying agents are not recommended for use with on-board impregnation systems.

Under some conditions, fertilizer impregnated with **Verdict** may clog air tubes or deflector plates on pneumatic application systems. Mineral oil may be added to **Verdict** before blending with fertilizer to reduce plugging. **DO NOT** use drying agents when mineral oil is used. To avoid separation of **Verdict** and mineral oil mixes in cold temperatures, keep mixture heated or agitated before blending with fertilizer. Mineral oil may be used at in-plant blending stations or on-board injection systems.

Generally, fertilizer application rates of at least 200 lbs to 700 lbs per acre of herbicide and fertilizer blend provide adequate distribution or coverage for **Verdict** across the soil surface. Apply uniformly to the soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at 1/2 rate and overlapped for a full rate offer a more uniform distribution. Use shallow (less than 2 inches) incorporation for improved weed control. Deeper incorporation dilutes the herbicide layer near the soil surface and may result in unsatisfactory weed control.

To calculate the herbicide rate when using dry bulk fertilizer applications:

$$\frac{\text{fl ozs herbicide per acre}}{\text{pounds fertilizer per acre}} \times 2000 = \frac{\text{fl ozs herbicide}}{\text{per ton of fertilizer}}$$

Chemigation Application via Sprinkler Irrigation Systems

Verdict may be applied as a chemigation treatment through sprinkler irrigation systems. Apply this product **ONLY** through a sprinkler irrigation system of the following type: center pivot, end tow, hand move, lateral move, side (wheel) roll, or solid set. **DO NOT apply this product through any other type of sprinkler irrigation system.** Application may be made alone or in tank mixes with other herbicides on this label registered for use in specified sprinkler irrigation systems. Application must be made within specific crop stage timings and product use rates given in the container directions for use label.

Uniform distribution of **Verdict® herbicide**-treated irrigation water is the sole responsibility of the applicator and is required to avoid crop injury, lack of herbicide effectiveness, or illegal pesticide residues in the crop. For calibration questions, contact State Extension Service specialists, equipment manufacturers, or other experts.

Proper calibration is the responsibility of the applicator. The system must be calibrated (with water only) to ensure the amount of **Verdict** applied corresponds to the specified rate. Apply **Verdict** in volume minimums of 0.33 to 0.67 inches of water using the lower volume for coarse-texture soils and the higher volume for fine-texture soils. Applications made in high volumes of water (more than 1 inch) may result in reduced weed control.

Meter herbicide dilution into irrigation water through the entire time of water application for center pivot and lateral move systems. For solid-set and hand-move irrigation systems, apply **Verdict** through the system at the beginning of the set; then follow with additional water to reach volume minimums as listed by soil type. To increase calibration accuracy of injection metering equipment, dilute **Verdict** in a minimum of 3 parts water to 1 part **Verdict**. Maintain agitation in injection nurse tanks to keep a uniform herbicide suspension during application.

Restrictions for chemigation:

1. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
2. **DO NOT** connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
3. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
4. Tail water (runoff water) from chemigation that contains **Verdict** must be recirculated and/or contained in the field in a cistern or holding reservoir from the initial application and/or used only on adjacent, approved crops for which **Verdict** is registered for this type of application.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. It must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
6. The sprinkler chemigation system must contain a functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow. In addition, systems must use a metering pump, like a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials compatible with pesticides and capable of being fitted with a system interlock.

7. The sprinkler chemigation system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
8. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Chemigation systems connected to public water systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank before pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section.

Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions, followed by triple rinsing the equipment before and after applying this product.

Spray Drift Management

It is the responsibility of the applicator to avoid spray drift at the application site, especially onto nontarget areas. The interaction of many equipment-related and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The applicator must be familiar with and take into account the information covered in the following spray drift reduction advisory information.

Controlling Droplet Size. The most effective way to reduce drift potential is to apply the largest droplets that provide sufficient coverage and control.

Volume. Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure. DO NOT exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are

needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles. Use the minimum number of nozzles that provide uniform coverage.

Nozzle Type. Use a nozzle type designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets.

Swath Adjustment. When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind. Drift potential is lowest between wind speeds of 3 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. If applying at wind speeds less than 3 mph, the applicator must determine if:

1. Conditions of temperature inversion exist, or
2. Stable atmospheric conditions exist at or below nozzle height.

DO NOT make applications into areas of temperature inversions or stable atmospheric conditions.

NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Wind Erosion. Avoid treating powdery, dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Additives

For optimum burndown activity with **Verdict® herbicide**, an adjuvant system must be used that includes the following:

Adjuvant	Rate
Methylated seed oil (MSO) ¹ or Crop oil concentrate (COC)	1 gal/100 gals (1% v/v) ²
PLUS	PLUS
Ammonium sulfate (AMS) or Urea ammonium nitrate (UAN)	8.5 to 17.0 lbs/100 gals (1% to 2% w/v) or 1.25 to 2.5 gals/100 gals (1.25% to 2.5% v/v)

¹MSO-based adjuvant **MUST** contain at least 60% methylated seed oil. Poor performance may occur with adjuvants containing less than 60% methylated seed oil.

²**DO NOT** use less than 1 pint/A of MSO with low-volume (less than 12.5 gallons/A) aerial or ground applications.

When fluid fertilizer is used as the spray carrier, add 1 pint/A of MSO for optimum burndown activity.

The use of AMS fertilizer is highly recommended when mixing **Verdict** with glyphosate-based herbicides.

DO NOT use a nonionic surfactant (NIS) as a substitute for COC or MSO, or poor performance on broadleaf weeds will occur.

When an adjuvant is to be used with this product, BASF recommends the use of a Chemical Producers and Distributors Association (CPDA) certified adjuvant.

Tank Mixing Information

Verdict may be tank mixed with one or more registered herbicide products according to the specific tank mixing instructions in this label and respective product labels. Refer to the **Crop-specific Information** for tank mixing details. It is the pesticide user's responsibility to ensure that all products in the mixtures are registered for the intended use. Read and follow the applicable restrictions and precautions and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the **Mixing Order** section using 2 teaspoons for each pound or 1 teaspoon for each pint of labeled use rate per acre.
3. Always cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, or fine particles that precipitate to the bottom, or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Maintain constant agitation throughout mixing and application until spraying is completed.

1. **Water** - Fill tank 1/2 to 3/4 full with clean water and start agitation.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.

3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives** (including dry and liquid fertilizers AMS or UAN)
5. **Water-dispersible products** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products**
7. **Emulsifiable concentrates** (including COC or MSO adjuvants)
8. **Remaining quantity of water**

If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend spray mixture before spraying is resumed. Continue agitation while spraying.

Use Restrictions

- **Maximum seasonal use rate** - Refer to **Crop-specific Information** section for the maximum cumulative amount of **Verdict® herbicide** per cropping season. A cropping season is defined as the period following harvest of the preceding crop through the harvest of the planned or current crop.
- If additional dimethenamid-P is applied, **DO NOT** apply more than a maximum cumulative amount of 0.98 lb ai/A dimethenamid-P per cropping season in grain sorghum, and **DO NOT** apply more than a maximum cumulative amount of 1.125 lbs ai/A dimethenamid-P per cropping season in field corn, popcorn, processing sweet corn, and soybean.
- **DO NOT** apply **Verdict** after crop emergence because severe crop injury will occur.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **Verdict is not for sale, distribution, or use in Nassau and Suffolk counties in New York State.**

Crop Rotation Intervals

Use the following table to determine the proper interval between **Verdict** application and the planting of rotational crops.

Crop	Verdict Use Rate (fl ozs/A)	
	< 19	19 to 25
	Rotational Crop Interval (months after application) ¹	
Alfalfa	7	8
Beans (edible) ²	4	6
Canola (rapeseed)	7	8
Chickpea	4	6
Corn, sweet	3	4
Cotton	6	6
Fruit and nut trees	6	9
Grass (forage, seed) establishment	6	9
Lentil	4	6
Peas (dry field, edible)	4	6
Rice	4	4
Small grains	4	4
Sorghum (grain)	0	1
Soybean ³	4	6
Soybean ³ , KIXOR® Selected	4	6
Sugarbeet	7	9
Sugarcane	7	9
Sunflower	7	9
Cover crops (winter, spring) ⁴	4	6
Other crops	7	9

¹ **DO NOT** include time when the soil is frozen.

² Edible bean refers to blackeyed pea, crowder pea, cowpea, and southern pea. Use the **Other Crops** rotational crop planting interval for beans not specifically listed in this table.

³ The planting interval for these crops and rates is further defined in the respective **Crop-specific Information** section of this label. Use the longer interval within listed ranges for indicated crops grown on coarse-texture soils with organic matter less than 2.0%.

⁴ Cover crops (winter, spring) may be planted after application of **Verdict**, either inter-seeded into the current crop before harvest or after harvest of the current crop. Depending on the sensitivity of the sown cover crop to **Verdict**, stand establishment may be reduced. If cover crops are sown for conservation purposes less than 4 months after **Verdict** application, **DO NOT** harvest as a food or feed crop, and **DO NOT** allow livestock to graze cover crops.

Emergency Replanting Intervals

- Field corn, popcorn, sweet corn, and grain sorghum (according to application rates in **Crop-specific Information**) may be replanted immediately after crop failure (because of environmental factors, including drought, frost, hail, etc.).
- Soybean (according to the application rates in **Crop-specific Information**) may be replanted (according to the intervals in the chart following) after crop failure (because of environmental factors including drought, frost, hail, etc.).

Replanting Intervals to Soybean Following Crop Failure

Soil Description	Verdict® herbicide Application Rate (fl ozs/A)				
	5	7.5	10 to 12	13 to 15	16 to 20
	Replanting Interval (months after application)				
Coarse soils ≤ 2% organic matter	1	1	1.5	3	4
All other soils	0	0.5	1	2	4

- Determine the rotational crop interval for tank mix products and follow the most restrictive interval of all products applied.

Crop-specific Information

This section provides directions for **Verdict** in specific crops. Read product information, mixing, application, weeds controlled, and adjuvant instructions in preceding sections of the label. Read and follow tank mix product labels for restrictions, precautions, instructions, and rotational crop restrictions.

Depending on specific crop application directions, **Verdict** may be applied for residual control of germinating weed seedlings before planting (preplant) or after planting but before crop emergence (preemergence) (refer to **Table 1** for list of weeds controlled) or burndown control of emerged broadleaf weeds (refer to **Table 2** for list of weeds controlled).

Thorough spray coverage is required for control of emerged broadleaf weeds. High populations and/or variations in weed size can prevent adequate spray coverage. Controlling fall-germinated weeds in the spring (e.g. horseweed/marestail) also requires thorough spray coverage. Use higher spray volumes (e.g. 15 to 20 gallons of water per acre) in these situations to increase spray coverage and optimize burndown activity.

Field Corn (grain, seed, silage), Popcorn, and Sweet Corn

Verdict may be applied preplant surface, preplant incorporated, or preemergence to corn. Corn in this label refers to field corn (grown for grain, seed, or silage), popcorn, and sweet corn (processing varieties only, not including sweet corn grown for seed or fresh market varieties). Before applying **Verdict** to seed corn, processing sweet corn, or popcorn, verify the selectivity of **Verdict** on your inbred line or hybrid with your local seed company (supplier) to help avoid potential injury to sensitive inbreds or hybrids.

Application Rate

Verdict can be applied as part of a one-pass or planned sequential (two-pass) weed control program. A one-pass weed control program should be used where no cultivation or postemergence herbicide application is anticipated. One-pass application rates for **Verdict** when applied alone, in tank mix, or sequentially are provided in **Table 4** for field corn and **Table 5** for popcorn and processing sweet corn.

Table 4. Residual Preemergence Rates of Verdict in Field Corn

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse ²	12	13
Medium	18	20
Fine	20	25

¹Refer to **Table 3** for definition of soil texture groups.

²Use on coarse soils with less than 1.5% organic matter may result in crop injury.

Table 5. Residual Preemergence Rates of Verdict in Popcorn and Processing Sweet Corn

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10
Medium	13	15
Fine	15	20

¹Refer to **Table 3** for definition of soil texture groups.

Verdict use rates applied as the residual component of a planned sequential (two-pass) program (see **Table 6** and **Table 7**) will provide control or suppression of listed weeds (**Table 1**) through early-to-mid season. For full-season weed control, apply a labeled postemergence treatment of **Status® herbicide** plus glyphosate as the sequential component (this applies to field and popcorn, not sweet corn).

Table 6. Residual Preemergence Rates of Verdict® herbicide in a Planned Sequential Program¹ in Field Corn and Popcorn

Soil Texture ²	Rate by Soil Texture (fl ozs/A)
Coarse	10 to 12
Medium	13 to 15
Fine	16 to 18

¹ Application rates in **Table 6** eliminate early season weed interference until cultivation or a labeled postemergence herbicide is applied. However, application rates in **Table 4** should be applied if **Verdict** is being used to control weeds resistant to another herbicide in the tank mix or sequential weed control program.

² Refer to **Table 3** for definition of soil texture groups.

Table 7. Residual Preemergence Rates of Verdict in a Planned Sequential Program¹ in Processing Sweet Corn

Soil Texture ²	Rate by Soil Texture (fl ozs/A)
Coarse	10 (DO NOT apply on coarse soils with ≤ 3% organic matter)
Medium	10
Fine	10

¹ Application rates in **Table 7** eliminate early season weed interference until cultivation or a labeled postemergence herbicide is applied. However, application rates in **Table 5** should be applied if **Verdict** is being used to control weeds resistant to another herbicide in the tank mix or sequential weed control program.

² Refer to **Table 3** for definition of soil texture groups.

Application Timing

Fall Application

For use only in Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin
Verdict may be applied in the fall to control weeds in conventional, minimum tillage, or no-till corn production systems planted the following spring. Apply from 20.0 to 25.0 fluid ounces of **Verdict** per acre to medium-texture and fine-texture soils with more than 2.5% organic matter. Fall applications must be made after October 1.

Broadcast surface apply **Verdict** in the fall after crop harvest when soil temperatures at the 4-inch depth are sustained at less than 55° F and before the ground freezes. Tillage operations may be conducted before or after applying **Verdict**. When following an application, tillage should be no more than 2-inches to 3-inches deep to uniformly incorporate the herbicide into the upper soil surface. When a sequential application program (fall application followed by spring application of **Verdict**) is used, the maximum combined rate of **Verdict** that may be applied is 25.0 fluid ounces per acre per crop season.

Early Preplant Surface Application (15 to 30 days before planting)

Use application rates in **Table 4** when making early preplant surface applications, using the highest application rate for a given soil texture. Early preplant surface applications are not recommended on coarse soils, in areas where average annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches, or for popcorn or processing sweet corn. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Early preplant surface applications may be applied as part of a split application program where applications are made as part of the application timings described in this label. However, the cumulative total of sequential application rates must not exceed the maximum labeled rate for a given soil texture.

Preplant Surface and Preplant Incorporated Application (up to 14 days before planting)

Verdict can be applied at use rates specified in **Table 4**, **Table 5**, **Table 6**, or **Table 7** to the soil surface or incorporated up to 14 days before planting on all soil types. For preplant incorporated applications, apply **Verdict** and incorporate into the upper soil surface (1 to 2 inches). Use a harrow, rolling cultivator, field cultivator, or other implement for uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Preemergence Surface Application

Apply **Verdict** at use rates specified in **Table 4**, **Table 5**, **Table 6**, or **Table 7** as a broadcast treatment to the soil surface after planting and before crop emergence. **Verdict** must be applied before crop emergence or injury will occur.

Burndown plus Residual Weed Control

In addition to residual weed control at any of the application timings previously described, **Verdict** also provides burndown of emerged broadleaf weeds listed in **Table 2**. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity. Burndown control of emerged grass weeds or additional broadleaf weeds not listed on the label requires a tank mix with another herbicide (like glyphosate).

Residual preemergence application rates of **Verdict** can follow a fall or early preplant burndown application of **Sharpen®** herbicide. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources. A minimum of 14 days is required between **Verdict** and **Sharpen** applications.

Burndown Weed Control Only

If limited or no residual broadleaf weed control is desired, **Verdict** can be applied at 5.0 fl ozs/A (all soil types) with an adjuvant system any time before corn emergence for burndown of broadleaf weeds listed in **Table 2**. A burndown application of **Verdict** can be followed by residual rates of **Verdict** (**Table 4**, **Table 6**, or **Table 7**) or **Sharpen**.

Separate sequential applications by at least 14 days. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources.

Enhanced Burndown in Seed Corn. Apply **Verdict®** herbicide preplant surface or preemergence at 5.0 to 10.0 fl ozs/A with an adjuvant system for enhanced burndown broadleaf weed control in seed corn before crop emergence. **DO NOT** apply more than 5.0 fl ozs/A on coarse soils. A sequential application of **Verdict** may be made with a minimum of 30 days between applications. **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** per cropping season in seed corn.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** after corn emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result. **Verdict** may be applied with all other classes of at-planting insecticides including neonicotinoids and pyrethroids.

EXCEPTION: **Verdict** may be applied when **Aztec® 2.1% Granular Insecticide**, **AZTEC® 4.67 G granular insecticide**, **Fortress® 5G granular insecticide**, or **SmartChoice™ 5G granular insecticide** is applied at planting as a band, T-band, or infurrow.

- **DO NOT** apply more than a maximum cumulative amount of 0.134 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.
- Corn, popcorn, or sweet corn forage and silage must not be harvested, fed, or grazed sooner than 80 days after application.
- There is no required (preharvest) interval between a preplant surface, preplant incorporated, or preemergence application of **Verdict** and the harvest of field corn grain, popcorn, seed corn, and sweet corn ears. Corn forage, stover, and sweet corn cannery waste may be fed to livestock after harvest.

Crop-specific Precautions

- **Verdict** application may result in delayed corn emergence and stunting under certain environmental conditions including cool temperatures, excessive rainfall/irrigation, and/or persistent wet soil conditions occurring after application.
- Ensure the corn seed row is closed. Soil conditions that cause poor seed furrow closure and coverage may result in delayed corn emergence or stunting.
- **Verdict** applied to processing sweet corn planted at a depth of 1/2 inch or less may result in crop injury.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity®** herbicide
- **Sharpen®** herbicide
- **Status®** herbicide
- **Zidua®** herbicide
- atrazine
- glyphosate (e.g. **Roundup®** herbicide)

NOTE: Refer to tank mix product labels to confirm the respective tank mix products are registered for use on specific corn types; not all corn products are registered for use on seed corn, popcorn, and processing sweet corn.

* Refer to **Tank Mixing Information** section for additional instructions.

Fallow

Verdict may be used as a burndown treatment to control broadleaf weeds at any time of the year during the fallow period following crop harvest and before the following crop is planted.

Application Rate and Timing

Apply **Verdict** as a broadcast burndown spray at 5.0 to 10.0 fl ozs/A plus recommended adjuvants (refer to **Additives** section for details). For best product performance, apply **Verdict** when broadleaf weeds are small and actively growing (refer to **Table 2** for list of weeds controlled). Thorough coverage of existing weeds is essential and higher spray volumes may be needed for best performance.

Sequential applications may be made with a minimum of 14 days between applications; **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.

For residual weed control, **Verdict** may be applied at 10.0 to 25.0 fl ozs/A.

Specific rotational crop intervals must be observed between an application of **Verdict** and planting of the following crop (see **Crop Rotation Intervals** section for crop rotation restrictions).

Tank Mixes

Broad-spectrum burndown control of grass weeds and/or additional broadleaf weeds requires a tank mix with another herbicide. **Verdict** may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity**
- **Distinct®** herbicide
- glyphosate (e.g. **Roundup**)

* Refer to **Tank Mixing Information** section for additional instructions.

Grain Sorghum

Verdict® herbicide may be applied preplant surface, preplant incorporated, or preemergence to grain sorghum. All **Verdict** applications must only be made to sorghum seed that has been properly treated by the seed company with an approved chloroacetamide herbicide safener or severe injury may occur.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf wrapping of grain sorghum. Grain sorghum normally outgrows these symptoms within 10 to 14 days.

Application Rate

Application rates for **Verdict** in grain sorghum depend on use pattern.

See **Table 8** for application rates in grain sorghum for **Verdict** when applied alone, in tank mix, or sequentially.

Table 8. Residual Rates of Verdict in Grain Sorghum

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10
Medium	13	15
Fine	15	20

¹ Refer to **Table 3** for definition of soil texture groups.

For grain sorghum grown in Nebraska and South Dakota, see **Table 9** for application rates for **Verdict** when applied alone, in tank mix, or sequentially.

Table 9. Residual Rates¹ of Verdict in Grain Sorghum in Nebraska and South Dakota

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ²	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10 to 12
Medium	DO NOT USE	13 to 15
Fine	DO NOT USE	16 to 18

¹ Application rates in **Table 9** eliminate early season weed interference. Full-season weed control requires a labeled tank mix partner, sequential postemergence herbicide application, and/or cultivation.

² Refer to **Table 3** for definition of soil texture groups.

Application Use Rate for Tank Mix Program

For grain sorghum grown in all states, apply **Verdict** at 10.0 fl ozs/A in a tank mix with other dimethenamid-P-containing herbicides; see **Table 10** for use rates.

Table 10. Use Rates for Dimethenamid-P when Tank Mixed with Verdict in Grain Sorghum^{1,4}

Use Rate of Dimethenamid-P ³ by Soil Texture and Organic Matter Content (lb ai/A)		
Soil Texture ²	Organic Matter	
	< 3%	≥ 3%
Coarse	0.19 to 0.28	0.28 to 0.47
Medium	0.28 to 0.47	0.47 to 0.61
Fine		

¹ Application rates in **Table 10** eliminate early season weed interference.

² Refer to **Table 3** for definition of soil texture groups.

³ Refer to the **Outlook® herbicide** label for conversion of use rates to fl ozs/A.

⁴ A tank mix with **atrazine** may also be applied. Refer to atrazine product labels for additional details on use rates in grain sorghum. Full-season weed control requires atrazine up to the maximum atrazine rate allowed for the soil texture and/or field.

Application Timing

Early Preplant Surface Application (15 to 30 days before planting)

Use application rates in **Table 8**, **Table 9**, and **Table 10** when making early preplant surface applications, using the highest application rate for a given soil texture. Early preplant surface applications are not recommended on coarse soils or in areas where average annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Early preplant surface applications may be applied as part of a split application program where applications are made as part of the application timings described in this label. However, the cumulative total of sequential application rates must not exceed the maximum labeled rate for a given soil texture.

Preplant Surface and Preplant Incorporated Application (up to 14 days before planting)

Verdict can be applied at use rates specified in **Table 8**, **Table 9**, and **Table 10** to the soil surface or incorporated up to 14 days before planting on all soil types. For preplant incorporated applications, apply **Verdict** and incorporate into the upper soil surface (1 to 2 inches). Use a harrow, rolling cultivator, field cultivator, or other implement for uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Preemergence Surface Application

Apply **Verdict** at use rates specified in **Table 8**, **Table 9**, and **Table 10** as a broadcast treatment to the soil surface after planting and before crop emergence. **Verdict** must be applied before crop emergence or injury will occur.

Burndown plus Residual Weed Control

In addition to residual weed control at any of the application timings previously described, **Verdict® herbicide** also provides burndown of emerged broadleaf weeds listed in **Table 2**. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity. Burndown control of emerged grass weeds or additional broadleaf weeds not listed on the label requires a tank mix with another herbicide (like glyphosate).

Residual preemergence application rates of **Verdict** can follow a fall or early preplant burndown application of **Sharpen® herbicide**. However, **DO NOT** exceed the cropping seasonal maximum cumulative amount of saflufenacil per acre from all product sources. A minimum of 30 or 60 days is required between **Verdict** applications and **Sharpen** applications (depending on **Sharpen** use rate; see **Sharpen** product label).

Burndown Weed Control Only

Verdict can be applied at 5.0 to 10.0 fl ozs/A (all soil types) with an adjuvant system (refer to the **Additives** section for details) any time before sorghum emergence for burndown of weeds listed in **Table 2**. A burndown application of **Verdict** can be followed by residual rates of **Verdict**. Sequential applications must be separated by at least 14 days. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** after grain sorghum emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred or severe injury may result.
- **DO NOT** apply more than a maximum cumulative amount of 0.111 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.
- **Verdict** is not registered for use on sweet or forage sorghum.
- Sorghum forage and silage can be harvested, fed, or grazed 70 or more days after application.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity® herbicide** (preplant only)
- **Outlook® herbicide**
- **Sharpen**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

* Refer to **Tank Mixing Information** section for additional instructions.

Soybean

Verdict may be applied in the fall and/or in the spring as a preplant or preemergence burndown application in conventional and reduced-till or no-till soybean for broadleaf weed control. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf chlorosis/necrosis of soybean. Soybean normally outgrows these symptoms within 10 to 14 days.

Not for use in soybean in California.

Application Rate and Timing

Fall Application

Apply **Verdict** at 5.0 to 10.0 fl ozs/A (0.022 to 0.044 lb ai/A of saflufenacil) for burndown broadleaf weed control after the prior crop is harvested. For residual weed control, **Verdict** may be applied up to 15.0 fl ozs/A. Application must be made before first killing frost. Fall application can be made to all soil types.

Spring Application

For all spring applications of **Verdict**, refer to **Soybean Planting Interval** information for minimum planting intervals.

Apply **Verdict** early preplant through preemergence at 5.0 fl ozs/A for burndown broadleaf weed control before crop emergence.

For early preplant enhanced burndown broadleaf weed control, apply **Verdict** at 7.5 or 10.0 fl ozs/A.

Sequential Application

Apply **Verdict** following a fall or early preplant burndown application of **Sharpen OR Verdict** (at 5.0 to 10.0 fl ozs/A). However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources; see **Crop-specific Restrictions** section. A minimum of 30 days and 60 days is required between product applications totaling 0.044 lb ai/A and 0.067 lb ai/A of saflufenacil, respectively.

Soybean Planting Interval

Depending on **Verdict** use rate, soil texture, and organic matter, an interval between **Verdict** application and planting may be required (see **Table 11** and **Table 12**). This interval must be observed before planting soybean or crop injury may occur.

Table 11. Minimum Soybean Planting Intervals

Minimum Preplant Interval (days) Required between Verdict® herbicide Application and Soybean Planting		
Verdict Use Rate (fl ozs/A)	Soil Texture¹	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	30	0
7.5	30	14
10.0	44	30

¹ Refer to **Table 3** for definition of soil texture groups.

Table 12. Minimum Soybean Planting Intervals when Verdict is Applied with other Group 14/Group E Herbicides¹

Minimum Preplant Interval (days) Required between Verdict Application and Soybean Planting when Tank Mixed or Sequentially Applied with a Group 14/Group E Herbicide²		
Verdict Use Rate (fl ozs/A)	Soil Texture³	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	30	14*
7.5	30	30
10.0	44	30

¹ Refer to other product's label and follow the most restrictive interval.

² **Group 14/Group E** herbicides including sulfentrazone or flumioxazin

³ Refer to **Table 3** for definition of soil texture groups.

*Interval for reduced-till and no-till soybean only. Interval for conventional-till soybean is 30 days.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** when soybean has reached the cracking stage or after emergence or severe crop injury will occur.
- **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** (0.089 lb ai/A of saflufenacil) per cropping season. Sequential applications **MUST** be separated by at least 30 days.
- **DO NOT** apply more than a maximum cumulative amount of 0.089 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply **Verdict** within 30 days of planting where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result.
- **DO NOT** graze or feed forage, hay, or straw to livestock.

Crop-specific Precautions

- Ensure the seed row is sufficiently covered with soil to avoid washing and concentration of the herbicide in the seed zone.
- Always use the most restrictive preplant interval of all inclusive herbicides when applying **Verdict** as part of a tank mix.
- Other **Group 14/Group E** herbicides labeled for postemergence application in soybean may be used 14 days or more after soybean emergence. Refer to other products' labels for use directions.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity®** herbicide (preplant only)
- **Extreme®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Sharpen®** herbicide
- **Zidua®** herbicide
- glyphosate (e.g. **Roundup®** herbicide)

* Refer to the **Tank Mixing Information** section for additional instructions.

Soybean (only Kixor® Selected varieties)

Use directions in this section are only intended for **Kixor® Selected soybean varieties**. Contact your local BASF representative or go to <http://www.agproducts.basf.us/products/kixor-selected-soybean-varieties.html> for a full list of current **Kixor® Selected soybean varieties**.

Verdict may be applied in fall and/or in spring as a preplant or preemergence burndown application in conventional and reduced-till or no-till soybean for broadleaf weed control; refer to **Table 2** for list of weeds controlled. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf chlorosis/necrosis of soybean. Soybean normally outgrows these symptoms within 10 to 14 days.

Not for use in soybean in California.

Application Rate and Timing

Fall Application

Apply **Verdict** at 5.0 to 10.0 fl ozs/A (0.022 to 0.044 lb ai/A of saflufenacil) for burndown broadleaf weed control after the prior crop is harvested. For residual control, **Verdict** may be applied up to 15 fl ozs/A. Application must be made before first killing frost. Fall application can be made to all soil types.

Spring Application

For all spring applications of **Verdict® herbicide**, refer to **Soybean Planting Interval** information for minimum planting intervals.

Apply **Verdict** early preplant through preemergence at 5.0 fl ozs/A for burndown broadleaf weed control before crop emergence.

Apply **Verdict** early preplant at 10.0 fl ozs/A for enhanced burndown broadleaf weed control.

Sequential Application

Apply **Verdict** following a fall or early preplant burndown application of **Sharpen® herbicide OR Verdict** (at 5.0 to 10.0 fl ozs/A). However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources; see **Crop-specific Restrictions** section. A minimum of 30 days and 60 days is required between product applications totaling 0.044 lb ai/A and 0.067 lb ai/A of saflufenacil, respectively.

Soybean Planting Interval

Depending on **Verdict** use rate, soil texture, and organic matter, an interval between **Verdict** application and planting may be required (see **Table 13**) or crop injury may occur.

Table 13. Minimum Kixor® Selected Soybean Planting Intervals

Minimum Preplant Interval (days) Required between Verdict Application and Planting of Kixor® Selected Soybean Varieties		
Verdict Use Rate (fl ozs/A)	Soil Texture¹	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	0	0
10.0	30	0

¹ Refer to **Table 3** for definition of soil texture groups.

Crop-specific Restrictions

- **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** (0.089 lb ai/A of saflufenacil) per cropping season. Sequential applications **MUST** be separated by at least 30 days.
- **DO NOT** apply more than a maximum cumulative amount of 0.089 lb ai/A of saflufenacil per cropping season in soybean from all product sources.
- **DO NOT** apply **Verdict** when soybean has reached the cracking stage or after emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** within 30 days of planting where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result.

- Always use the most restrictive preplant interval of all inclusive herbicides when applying **Verdict** as part of a tank mix.
- **DO NOT** graze or feed forage, hay, or straw to livestock.
- **DO NOT** apply **Verdict** with other products containing **Group 14/Group E** herbicides (including sulfentrazone or flumioxazin) as a tank mix or a sequential spring application within 30 days of planting because crop injury may result.

Crop-specific Precautions

- Ensure the seed row is sufficiently covered with soil to avoid washing and concentration of the herbicide in the seed zone.
- Other **Group 14/Group E** herbicides labeled for postemergence application in soybean may be used 14 days or more after soybean emergence. Refer to other products' labels for use directions.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity® herbicide** (preplant only)
- **Sharpen**
- glyphosate (e.g. **Roundup® herbicide**)

* Refer to the **Tank Mixing Instructions** section for additional instructions.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

1108

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Fortress is a registered trademark of AMVAC Chemical Corporation.

SmartChoice is a trademark of AMVAC Chemical Corporation.

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007969-00279.20170828b.NVA 2017-04-320-0031
Supersedes: NVA 2015-04-320-0179

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

 **BASF**
We create chemistry

Message

From: NYANGULU, JAMES M [AG/1920] [james.m.nyangulu@monsanto.com]
Sent: 12/20/2016 2:10:47 PM
To: Baris, Reuben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a0181e3f02a246fc915a4af026e249fc-Baris, Reuben]
Subject: AD2611_Premix_Herbicide_EPA-Brief_v1
Attachments: AD2611_Premix_Herbicide_EPA-Brief_v1.pdf

Hi Reuben,

As promised at our meeting last week, here is a one page summary of the submission we made last week for this new premix containing Acetochlor and dicamba under PRIA Category 314.

Please get in touch if you have any clarifying questions.

James

This email and any attachments were sent from a Monsanto email account and may contain confidential and/or privileged information. If you are not the intended recipient, please contact the sender and delete this email and any attachments immediately. Any unauthorized use, including disclosing, printing, storing, copying or distributing this email, is prohibited. All emails and attachments sent to or from Monsanto email accounts may be subject to monitoring, reading, and archiving by Monsanto, including its affiliates and subsidiaries, as permitted by applicable law. Thank you.

Background

AD2611 Premix Herbicide is a combination of encapsulated acetochlor combined with sodium dicamba, 26.4% and 12.9% (11.7% dicamba a.e.), respectively. This formulation contains VaporGrip™ Technology that has been demonstrated to reduce the volatility potential of dicamba. This technology has been previously reviewed and approved by the agency for two dicamba-containing products: XtendiMax™ With VaporGrip™ Technology (EPA Reg. No. 524-617), and Roundup Xtend™ With VaporGrip™ Technology (EPA Reg. No. 524-616).

This submission is supported with the following data package:

- Acute Toxicology six-pack
- Product Chemistry/ Accelerated Aging
- Endangered Species Bridging Summary
 - Driftable fines for AD2611 Premix Herbicide are not increased compared to XtendiMax
 - EPA's EPISuite Modeling supports the sodium salt is less volatile than DGA salt
 - Humidome data supports AD2611 Herbicide is approximately 5x less volatile than Clarity
 - Patent literature has no issued synergy claims between acetochlor and dicamba
- Wind-tunnel report
- Humidome report

Product Label

The proposed Master label for AD2611 Premix Herbicide contains the most restrictive label language from both the Warrant Herbicide (EPA Reg. No 524-591) and XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617) labels. The proposed dicamba AD2611 Premix Herbicide use rate (0.5 lb dicamba a.e./A) is the same rate that has been recently approved for uses in dicamba-tolerant soybean and cotton. The acetochlor use rate (1.125 lb acetochlor/A) in AD2611 Premix Herbicide is within the range of rates already approved by the EPA for acetochlor. Therefore, the data provided supports that the assessments of each individual EPA-registered formulation (Warrant Herbicide and XtendiMax With VaporGrip Technology) are protective of this premix formulation.

Equivalent properties of sodium and DGA salts

EPA's assessment for the new uses of dicamba indicated that all registered salts of dicamba dissociate within 75 seconds (MRID 43288001), which supports equivalent toxicological and ecological effects for the sodium salt of dicamba in this product to the diglycolamine (DGA) salt currently registered for the proposed uses. In addition, an EPA EPISuite assessment of relative volatility potential between registered salts of dicamba found the evaluation for the DGA salt of dicamba to be protective of offsite exposure from volatility for the sodium salt of dicamba.

Offsite movement

Monsanto has assessed the relative amount of driftable fines and volatility for AD2611 Premix Herbicide in comparison to other EPA-registered dicamba-containing products. AD2611 Premix Herbicide is less volatile and has less driftable fines than registered products containing the DGA salt of dicamba. These properties were assessed using wind-tunnel and humidome studies following protocols previously evaluated by EFED and found to be acceptable. Therefore, further review of these protocols by the EFED division is not needed.

Synergy

Currently, there are no granted or issued patent Claims with dicamba and acetochlor (MRID 50103901). One patent application does contain data regarding dicamba and acetochlor; this patent application is not relevant to EPA's endangered species risk assessment, because it is a screening level study with exposures greater than 1000x higher than expected exposure at the edge of the down-wind buffer.

Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 3/14/2018 1:12:48 PM
To: SEIFERT-HIGGINS, SIMONE [AG/1005] [simone.seifert-higgins@monsanto.com]; Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]
CC: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]; BHAKTA, TINA [AG/1005] [tina.bhakta@monsanto.com]; CUBBAGE, JERRY W [AG/1005] [jerry.w.cubbage@monsanto.com]
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Hi Simone,

I don't have an estimate as all of the synergy verification is tied up with one individual. The number of requests for tank mix partners we've received in the last 6 months has overloaded the process and bogged it down. They are all "urgent" mixes. It is unlikely we will get to Cotoran within the next 30-35 days as there are many actives in front of it. I will impress the urgency on our team here and see if we can break it free as soon as possible.

Thanks.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: SEIFERT-HIGGINS, SIMONE [AG/1005] [mailto:simone.seifert-higgins@monsanto.com]
Sent: Wednesday, March 14, 2018 8:39 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>; CUBBAGE, JERRY W [AG/1005] <jerry.w.cubbage@monsanto.com>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Reuben,

Thank you for sharing the good news on Fierce and Fierce XLT and your comments on the cover letter! We will proceed getting those two products added to the XtendiMax URL. Regarding Cotoran, do you have an estimate as to when this product can be posted? As you know, Cotoran is an important herbicide used prior to cotton planting and as the season progresses, the window for preplant/preemergent use will close within the next 30 to 35 days. I appreciate our attention on enabling growers to tankmix Cotoran with XtendiMax.

Regards,

Simone

From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]
Sent: Tuesday, March 13, 2018 4:24 PM
To: SEIFERT-HIGGINS, SIMONE [AG/1005] <simone.seifert-higgins@monsanto.com>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Hi Simone,

Thanks for the submission, I am acknowledging receipt. Also, thank you for the clarity in your coverletter. I was able to go back through what has already been cleared for synergy concerns, and made the following determination:

Fierce and Fierce XLT may be added to your website as flumioxazin has been cleared for mixes with dicamba. We will conduct the verification search for fluometuron, the a.i. contained in Cotoran 4L.

I hope this helps.
Thank you.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: SEIFERT-HIGGINS, SIMONE [AG/1005] [<mailto:simone.seifert-higgins@monsanto.com>]
Sent: Friday, February 09, 2018 4:42 PM
To: Baris, Reuben <Baris.Reuben@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>
Subject: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Dear Mr. Baris,
Please find attached the form 8570-1 form, wind tunnel and modeling report (MSL0029229), and the cover letter notifying the amendment of the XtendiMax URL (xtendimaxapplicationrequirements.com). Monsanto is self-certifying that these changes do not adversely affect spray drift properties of XtendiMax With VaporGrip Technology (EPA Reg. No 524-617). Therefore, and pursuant to Section 6 of the Terms and Conditions, Monsanto intends to proceed with adding the tank mix products in this amendment to www.xtendimaxapplicationrequirements.com.

Please let me know if you have any concerns or questions!

Regards,
Simone

Simone Seifert-Higgins, Ph.D.
Regulatory Affairs Manager
Monsanto Company
700 Chesterfield Parkway West
Chesterfield, MO 63017
Office: 636-737-9571
Cell: 314-330-3053

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Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 5/16/2018 7:53:47 PM
To: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Hi Tom,
You haven't missed it. It is still pending. But at the top of the list as I understand it. Hopefully soon.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: MARVIN, THOMAS [AG/1920] [mailto:thomas.marvin@monsanto.com]
Sent: Wednesday, May 16, 2018 3:32 PM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Reuben,

Any update on this pending tank clearance for Cotoran (Fluometuron) + dicamba that has been pending since 2/2017? Apologies if I missed an email from you on this.

Thanks,

Tom

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846
Desk: 202-383-2851

From: MARVIN, THOMAS [AG/1920]
Sent: Friday, March 16, 2018 10:21 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Reuben:

Thanks again for confirming the two products below. Attached is the email history on the third product (Cotoran + dicamba), which dates back to February, 2017. Hopefully this establishes a better priority for that combination? Also, can you share the comprehensive list of AIs that have been cleared by EPA to date so we can prioritize the next round?

Thanks,

Tom

Tom Marvin

Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846
Desk: 202-383-2851

From: MARVIN, THOMAS [AG/1920]
Sent: Wednesday, March 14, 2018 10:59 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Reuben: many thanks for confirming clearance of the 2 products.

Tom

----- Original Message -----

Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

From: "Baris, Reuben" <Baris.Reuben@epa.gov>

Date: Mar 14, 2018, 9:13 AM

To: "SEIFERT-HIGGINS, SIMONE [AG/1005]" <simone.seifert-higgins@monsanto.com>, "Rowland, Grant" <Rowland.Grant@epa.gov>

Hi Simone,

I don't have an estimate as all of the synergy verification is tied up with one individual. The number of requests for tank mix partners we've received in the last 6 months has overloaded the process and bogged it down. They are all "urgent" mixes. It is unlikely we will get to Cotoran within the next 30-35 days as there are many actives in front of it. I will impress the urgency on our team here and see if we can break it free as soon as possible.

Thanks.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: SEIFERT-HIGGINS, SIMONE [AG/1005] [<mailto:simone.seifert-higgins@monsanto.com>]

Sent: Wednesday, March 14, 2018 8:39 AM

To: Baris, Reuben <Baris.Reuben@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>

Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>; CUBBAGE, JERRY W [AG/1005] <jerry.w.cubbage@monsanto.com>

Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Reuben,

Thank you for sharing the good news on Fierce and Fierce XLT and your comments on the cover letter! We will proceed getting those two products added to the XtendiMax URL. Regarding Cotoran, do you have an estimate as to when this product can be posted? As you know, Cotoran is an important herbicide used prior to cotton planting and as the season progresses, the window for preplant/preemergent use will close within the next 30 to 35 days. I appreciate our attention on enabling growers to tankmix Cotoran with XtendiMax.

Regards,
Simone

From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]
Sent: Tuesday, March 13, 2018 4:24 PM
To: SEIFERT-HIGGINS, SIMONE [AG/1005] <simone.seifert-higgins@monsanto.com>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>
Subject: RE: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Hi Simone,

Thanks for the submission, I am acknowledging receipt. Also, thank you for the clarity in your coverletter. I was able to go back through what has already been cleared for synergy concerns, and made the following determination:

Fierce and Fierce XLT may be added to your website as flumioxazin has been cleared for mixes with dicamba. We will conduct the verification search for fluometuron, the a.i. contained in Cotoran 4L.

I hope this helps.

Thank you.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: SEIFERT-HIGGINS, SIMONE [AG/1005] [mailto:simone.seifert-higgins@monsanto.com]
Sent: Friday, February 09, 2018 4:42 PM
To: Baris, Reuben <Baris.Reuben@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>; BHAKTA, TINA [AG/1005] <tina.bhakta@monsanto.com>
Subject: Addition of tank mix products to XtendiMax with VaporGrip Technology (EPA Reg. No. 524-617)

Dear Mr. Baris,

Please find attached the form 8570-1 form, wind tunnel and modeling report (MSL0029229), and the cover letter notifying the amendment of the XtendiMax URL (xtendimaxapplicationrequirements.com). Monsanto is self-certifying that these changes do not adversely affect spray drift properties of XtendiMax With VaporGrip Technology (EPA Reg. No 524-617). Therefore, and pursuant to Section 6 of the Terms and Conditions, Monsanto intends to proceed with adding the tank mix products in this amendment to www.xtendimaxapplicationrequirements.com.

Please let me know if you have any concerns or questions!

Regards,
Simone

Simone Seifert-Higgins, Ph.D.
Regulatory Affairs Manager
Monsanto Company
700 Chesterfield Parkway West
Chesterfield, MO 63017
Office: 636-733-9571
Cell: 314-330-3053

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Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 5/7/2018 4:22:27 PM
To: Craig D Kleppe [craig.kleppe@basf.com]
Subject: RE: 7969-279 label comments
Attachments: 7969-279-20180504.pdf

Hi Craig,
Attached is the approval letter and stamped label.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: Craig D Kleppe [mailto:craig.kleppe@basf.com]
Sent: Monday, May 07, 2018 8:13 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: 7969-279 label comments

Reuben,

Thanks for the label approval. I realize it's hard to carve out time for fast-track actions currently, so I appreciate your attention to this one. Thanks.

Craig Kleppe
Product Registration Manager

Phone: +1 919-547-2615, Mobile: +1 919-225-9261, Email: craig.kleppe@basf.com
Postal Address: BASF Corporation, 26 Davis Drive, Research Triangle Park, North Carolina USA 27709-3528



From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]
Sent: Friday, May 4, 2018 4:34 PM
To: Craig D Kleppe <craig.kleppe@basf.com>
Subject: FW: 7969-279 label comments

It seems I was so excited to deliver the good news I sent it to myself...oops!
Have a great weekend.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: Baris, Reuben
Sent: Friday, May 04, 2018 4:31 PM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: 7969-279 label comments

Hi Craig,
I stamped the label and it is going through out qaqc processes before posting to PPLS. Once that happens I will send you the stamped approved label, but it's done! Thanks for your patience.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: Baris, Reuben
Sent: Thursday, May 03, 2018 12:23 PM
To: 'Craig D Kleppe' <craig.kleppe@basf.com>
Subject: RE: 7969-279 label comments

Hi Craig,
I'm trying. I know you're under the gun. Today or tomorrow I should have it ready to go.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: Craig D Kleppe [<mailto:craig.kleppe@basf.com>]
Sent: Thursday, May 03, 2018 7:33 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: 7969-279 label comments

Rueben,

Any news on this label approval ?? I need to go to print and production.

Craig Kleppe
Product Registration Manager

Phone: +1 919 547-2615, Mobile: +1 919-225-9261, Email: craig.kleppe@basf.com
Postal Address: BASF Corporation, , 26 Davis Drive, Research Triangle Park, North Carolina, 27709-3528 , United States



From: Baris, Reuben [<mailto:Baris.Reuben@epa.gov>]
Sent: Tuesday, April 24, 2018 9:28 AM

To: Craig D Kleppe <craig.kleppe@basf.com>

Subject: RE: 7969-279 label comments

Hi Craig,

Just wanted to acknowledge I received this. I haven't looked at it though.

Personal / Ex. 6

Personal / Ex. 6 Playing a bit of catch up today. Ill get to this as soon as I can.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH

U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: Craig D Kleppe [mailto:craig.kleppe@basf.com]

Sent: Monday, April 23, 2018 1:36 PM

To: Baris, Reuben <Baris.Reuben@epa.gov>

Subject: RE: 7969-279 label comments

Reuben,

Please see attached the revised "b" version of Verdict master label. Per your request, the following changes have been made:

- 1) Added AI names to MOA banner on front page
- 2) Added additional Herbicide Resistance Management language to section to align with HRM principles in 2017 PR Notices
- 3) Changed "sensitive areas" to "nontarget areas" in the wind speed paragraph for ground applications.

I also reply to your other inquiries in the label (but no changes made). My rebuttal is necessary because I don't think any further text changes are warranted.

- 1) Buffer zones tables – In the last master label amendment for Saflufenacil base product, Kay Montague requested that I drop the rate X buffer table because we list only the maximum buffer zone on the container label. So following in-line with Kay's request on other Saflufenacil products, we simplified and only list maximum rate buffer zones for Verdict.
- 2) Buffer zone statement – For Saflufenacil's registration in 2009, EFED and Kay established the BZ statements to move toward protecting all nontarget areas from spray drift instead of only endangered species. The distances are calculated via AgDrift model to be protective from edge of field. The label language has been successful, as we have had very few spray drift complaints with Saflufenacil products over the years. No need to further complicate the spray drift language of this product, it is definitely not in the same category as dicamba.
- 3) Rotational crop intervals – for both AIs Saflufenacil and Dimethenamid-P, the minimum rot crop interval to non-registered crops to avoid inadvertent residues is 4 months. Verdict use rates differ across soil types but the average rate is ~19 fl oz/A for preemergence residual applications. Verdict also used for preplant burndown apps but at lesser rates. So the "<19" category does 2 things, it covers the 4 month interval for non-registered crops and where applicable it aligns with rot crop intervals according to solo Saflufencil label. Any rot crop interval greater than 4 months (in both rate columns) are BASF self-imposed to protect from any potential crop injury to sensitive follow crops, i.e., liability management. In the Herbicide Resistance Management section, we only mention "follow labeled rates", not maximum, so there is no contradiction.
- 4) NOTE in corn section is needed because of the other types of Corn (sweet, pop, seed, etc.) listed for use with Verdict. In other crop sections, the NOTE is not applicable because only one crop type is mentioned there (i.e., grain sorghum, fallow, soybean).

I appreciate your attention to this label. I need a stamped version ASAP.

P.S. Because our master label amendments are submitted to EPA according to print and production schedules, we need to adjust our timelines to stay on schedule. It seems now that EPA is not able to keep a 90-day review period for fast-track amendments because of the back log and staffing issues, so what is your guidance back to registrants on the practical review time for fast tracks ?? 6 or 9 months ?? Please advise. Thanks.

Regards

Craig Kleppe
Product Registration Manager

Phone: +1 919 547-2615 Mobile: +1-919-225-9261 Fax: +1 919 547-2850 E-Mail: craig.kleppe@basf.com
Postal Address: BASF Corporation, 26 Davis Drive, P.O. Box 13528, Research Triangle Park, NC 27709, USA

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2

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From: Baris, Reuben [<mailto:Baris.Reuben@epa.gov>]

Sent: Friday, April 20, 2018 4:28 PM

To: Craig D Kleppe <craig.kleppe@basf.com>

Subject: 7969-279 label comments

Hi Craig,

Sorry for the delays on this. If you can turn these comments around without much rebuttal I can make the time for the approval.

Let me know if you have any questions.

Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH

U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 4, 2018

Craig Kleppe
Product Registration Manager
BASF Corporation
26 Davis Drive, PO Box 13528
Research Triangle Park, NC 27709

Subject: Label Amendment – Revised Master Label
Product Name: Verdict Powered by Kixor Herbicide
EPA Registration Number: 7969-279
Application Date: September 1, 2017
Decision Number: 533090

Dear Dr. Kleppe:

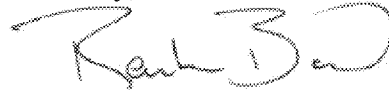
The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact me by phone at 703-305-7356, or via email at baris.reuben@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Reuben Baris', with a stylized flourish at the end.

Reuben Baris, Product Manager 25
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

Verdict®

Powered by Kixor® Herbicide

ACCEPTED

05/04/2018

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 7969-279

**For use in field corn (grain, seed, silage), popcorn, processing
sweet corn, grain sorghum, and soybean**

Active Ingredients*:

saflufenacil: N'-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,
6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide 6.24%

dimethenamid-P: (S)-(2-chloro-N-[(1-methyl-2-methoxy)ethyl]-N-
(2,4-dimethyl-thien-3-yl)-acetamide) 55.04%

Other Ingredients:** 38.72%

Total: 100.00%

* Contains 0.57 pound of saflufenacil and 5.0 pounds of dimethenamid-P per gallon,
formulated as an emulsifiable concentrate

** Contains petroleum distillates

EPA Reg. No. 7969-279

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN
WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en
detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use,
Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

**In case of an emergency endangering life or property involving this product,
call day or night 1-800-832-HELP (4357).**

Net Contents:

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes; then continue rinsing. • Call a poison control center for treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • DO NOT induce vomiting unless told to by a poison control center or doctor. • DO NOT give any liquid to the person. • DO NOT give anything to an unconscious person.
If on skin	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	
Note to Physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.	

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed. **DO NOT** get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, or nitrile rubber \geq 14 mils. Replace gloves after 8 hours of use (either continuous or intermittent). Thoroughly rinse gloves with water between intermittent uses.
- Protective eyewear (face shield, goggles, or safety glasses)

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for **applicators and other handlers** and have such PPE immediately available for use in an emergency, including a spill or equipment breakdown.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

For terrestrial uses, **DO NOT** apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Groundwater Advisory. Saflufenacil has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. Dimethenamid-P has properties that may result in groundwater contamination. Application in areas where soils are permeable or coarse and groundwater is near the surface could result in groundwater contamination.

Surface Water Advisory. This product may impact surface water due to runoff of rainwater. This is especially true

for poorly draining soils and soils with shallow groundwater. This product is classified as having high potential for reaching surface water via runoff for several weeks after application. A level, well-maintained buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of this chemical from runoff water and sediment. Runoff of this product will be reduced by avoiding application when rainfall is forecast to occur within 48 hours.

Point-source Contamination. To prevent point-source contamination, **DO NOT** mix or load this or any other pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or dike mixing/loading areas described as follows.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing and/or loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent:

- Back-siphoning into wells
- Spills
- Improper disposal of excess pesticide, spray mixes, or rinsates

Check valves or anti-siphoning devices must be used on all mixing equipment.

Movement Dissolved in Runoff or Through Soil.

DO NOT apply under conditions that favor runoff.

DO NOT apply to impervious substrates including paved or highly compacted surfaces or frozen soils. Groundwater contamination may occur in areas where soils are permeable or coarse and groundwater is near the surface. To minimize the possibility of groundwater contamination, carefully follow application rate specifications as affected by soil type in the **Application Instructions** section of this label. **DO NOT** apply if all 3 criteria exist:

1. Coarse soils classified as sand (does not include loamy sand or sandy loam)
2. Less than 3% organic matter (as determined by soil tests, if not known)
3. Where depth to groundwater is 30 feet or less

Movement by Water Erosion of Treated Soil. DO NOT apply or incorporate this product by flood or furrow irrigation. Ensure treated areas have received at least 1/2 inch of rainfall before using tailwater for subsequent irrigation of other fields.

Endangered Species Protection Requirements

This product may have effects on federally listed threatened or endangered plant species or their critical habitat. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain that Bulletin, consult <http://www.epa.gov/espp/>, or call 1-844-447-3813 no more than 6 months before using this product. Applicators must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will generally be available from the above sources 6 months before their effective dates.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at time of herbicide application.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Observe all restrictions and precautions in this label and the labels of products used in combination with **Verdict® herbicide**. The use of **Verdict** not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions, and **Conditions of Sale and Warranty** are to be followed.

BASF Corporation does not recommend or authorize the use of this product in manufacturing, processing, or preparing custom blends with other products for application in crops.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours**.

EXCEPTION: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, including plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils
- Shoes plus socks
- Protective eyewear

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

DO NOT use or store near heat or open flame. Store in original container in a well ventilated area separately from fertilizer, feed, or foodstuffs and away from other pesticides. Avoid cross-contamination with other pesticides. Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

Pesticide Disposal

Wastes resulting from this product must be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(continued)*

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage including cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

Product Information

Verdict® herbicide is a selective residual preemergence herbicide for controlling most annual grass weeds, annual broadleaf weeds, and sedges in field corn, popcorn, processing sweet corn, grain sorghum, and soybean (refer to **Table 1** for a list of weeds controlled preemergence). Residual preemergence application of **Verdict** must be activated by at least 1/2 inch of rainfall or sprinkler irrigation before weed seedling emergence. When **Verdict** is not activated, a labeled postemergence herbicide or cultivation may be needed to control weed escapes.

Verdict also provides contact burndown of many broadleaf weeds (refer to **Table 2** for a list of weeds controlled by a burndown application). An adjuvant (refer to **Additives** section for details) is required with **Verdict** for optimum broadleaf burndown activity. Burndown application of **Verdict** should be made when broadleaf weeds are small and actively growing. Burndown activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions, or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger broadleaf weeds, use a higher application rate within an application rate range and/or higher spray volumes. Angling nozzles forward (to 45 degrees) may improve penetration of denser weed canopies.

Tank mixes with contact herbicides (e.g. carfentrazone, paraquat) may reduce the burndown activity of **Verdict**.

In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to take if material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Table 1. Weeds Controlled by a Residual Preemergence Application of Verdict® herbicide

Common Name	Scientific Name	C = Control S = Suppression¹
Annual Broadleaf Weeds		
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C
Buckwheat, wild	<i>Polygonum convolvulus</i>	C
Buffalobur	<i>Solanum rostratum</i>	C
Burcucumber	<i>Sicyos angulatus</i>	S
Canola, volunteer (rapeseed), all types	<i>Brassica</i> spp.	C
Carpetweed	<i>Mollugo verticillata</i>	C
Chamomile, mayweed	<i>Anthemis cotula</i>	C
Chickweed, common	<i>Stellaria media</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	C
Copperleaf, Virginia	<i>Acalypha virginica</i>	C
Devil's-claw	<i>Proboscidea louisiana</i>	S
Eclipta	<i>Eclipta prostrata</i>	S
Fleabane, hairy	<i>Conyza bonariensis</i>	C
Galinsoga, smallflower	<i>Galinsoga parviflora</i>	C
Groundcherry, cutleaf	<i>Physalis angulata</i>	C
Horseweed (marestail)	<i>Conyza canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C
Kochia	<i>Kochia scoparia</i>	C
Ladysthumb	<i>Polygonum persicaria</i>	C
Lambsquarters, common	<i>Chenopodium album</i>	C
Mallow, Venice	<i>Hibiscus trionum</i>	C
Marestail (horseweed)	<i>Conyza canadensis</i>	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	C
Morningglory, palmleaf	<i>Ipomoea wrightii</i>	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	C
Morningglory, tall	<i>Ipomoea purpurea</i>	C
Mustard, wild	<i>Sinapis arvensis</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, cutleaf	<i>Solanum triflorum</i>	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Pennycress, field	<i>Thlaspi arvense</i>	C
Pigweed, prostrate	<i>Amaranthus blitoides</i>	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pigweed, tumble	<i>Amaranthus albus</i>	C
Puncturevine	<i>Tribulus terrestris</i>	S
Purslane, common	<i>Portulaca oleracea</i>	C

(continued)

Table 1. Weeds Controlled by a Residual Preemergence Application of Verdict® herbicide (continued)

Common Name	Scientific Name	C = Control S = Suppression ¹
Annual Broadleaf Weeds (continued)		
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	C
Sida, prickly	<i>Sida spinosa</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Sowthistle, annual	<i>Sonchus arvensis</i>	C
Spurge, nodding	<i>Chamaesyce nutans</i>	C
Spurge, spotted	<i>Chamaesyce maculata</i>	C
Starbur, bristly	<i>Acanthospermum hispidum</i>	C
Sunflower, common	<i>Helianthus annuus</i>	C
Thistle, Russian	<i>Salsola kali</i>	C
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp	<i>Amaranthus tuberculatus</i>	C
Annual Grass Weeds		
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Bluegrass, annual	<i>Poa annua</i>	C
Bluegrass, roughstalk	<i>Poa trivialis</i>	C
Brome, California	<i>Bromus carinatus</i>	C
Brome, downy	<i>Bromus tectorum</i>	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C
Crabgrass, smooth	<i>Digitaria ischaemum</i>	C
Cupgrass, Southwestern	<i>Eriochloa gracilis</i>	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	S
Fescue, rattail	<i>Vulpia myuros</i>	C
Foxtail, giant	<i>Setaria faberi</i>	C
Foxtail, green	<i>Setaria viridis</i>	C
Foxtail, yellow	<i>Setaria pumila</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	S
Millet, wild proso	<i>Panicum miliaceum</i>	S
Panicum, fall	<i>Panicum dichotomiflorum</i>	C
Panicum, Texas	<i>Panicum texanum</i>	S
Rice, red	<i>Oryza sativa</i>	C
Ryegrass, Italian	<i>Lolium multiflorum</i>	C
Sandbur	<i>Cenchrus</i> spp.	S
Shattercane	<i>Sorghum bicolor</i>	S
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	S
Witchgrass	<i>Panicum capillare</i>	C
Sedges		
Flatsedge, rice	<i>Cyperus iria</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	S

¹To complement control, **Verdict** should be used in tank mixes or sequential applications with other labeled herbicides that provide additional control of noted weeds.

Table 2. Broadleaf Weeds Controlled by a Burndown Application of Verdict® herbicide

Common Name	Scientific Name	C = Control S = Suppression	Maximum Height or Diameter (inches)
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C	6
Bedstraw, catchweed	<i>Galium aparine</i>	C	3
Beggarticks, hairy	<i>Bidens pilosa</i>	C	6
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	6
Bindweed, field	<i>Convolvulus arvensis</i>	S ¹	6
Buckwheat, wild	<i>Polygonum convolvulus</i>	C	3
Canola, volunteer (rapeseed)	<i>Brassica</i> spp.	C	6
Carpetweed	<i>Mollugo verticillata</i>	C	6
Chickweed, common	<i>Stellaria media</i>	S	3
Cocklebur, common	<i>Xanthium strumarium</i>	C	6
Cotton, volunteer	<i>Gossypium hirsutum</i>	C	growing from seed, ≤ 6 leaves
Cowcockle	<i>Vaccaria pyramidata</i>	C	4
Dandelion	<i>Taraxacum officinale</i>	S ¹	6
Eveningprimrose, cutleaf	<i>Oenothera laciniata</i>	C	4
Falsesflax, smallseed	<i>Camelina microcarpa</i>	C	4
Filaree, broadleaf	<i>Erodium botrys</i>	C	4
Filaree, redstem	<i>Erodium cicutarium</i>	S	3
Filaree, whitestem	<i>Erodium moschatum</i>	C	4
Fleabane, hairy	<i>Conyza bonariensis</i>	C	6
Flixweed	<i>Descurainia sophia</i>	C	6
Goosefoot, nettleleaf	<i>Chenopodium murale</i>	C	3
Groundcherry, cutleaf	<i>Physalis angulata</i>	C	6
Groundsel, common	<i>Senecio vulgaris</i>	C	4
Hawksbeard, narrowleaf	<i>Crepis tectorum</i>	C	6
Hemlock, poison	<i>Conium maculatum</i>	C	6
Henbit	<i>Lamium amplexicaule</i>	S	3
Horseweed (maretail)	<i>Conyza canadensis</i>	C	6
Knotweed, prostrate	<i>Polygonum aviculare</i>	C	3
Kochia	<i>Kochia scoparia</i>	C	3
Ladysthumb	<i>Polygonum persicaria</i>	C	6
Lambsquarters, common	<i>Chenopodium album</i>	C	6
Lambsquarters, narrowleaf	<i>Chenopodium pratericola</i>	C	6
Lettuce, miner's	<i>Claytonia perfoliata</i>	C	6
Lettuce, prickly	<i>Lactuca serriola</i>	C	6
Mallow, common	<i>Malva neglecta</i>	C	6
Mallow, little (cheeseweed)	<i>Malva parviflora</i>	C	6
Mallow, Venice	<i>Hibiscus trionum</i>	C	6
Maretail (horseweed)	<i>Conyza canadensis</i>	C	6
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriscula</i>	C	6
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	C	6

(continued)

Table 2. Broadleaf Weeds Controlled by a Burndown Application of Verdict® herbicide (continued)

Common Name	Scientific Name	C = Control S = Suppression	Maximum Height or Diameter (inches)
Morningglory, pitted	<i>Ipomoea lacunosa</i>	C	6
Morningglory, tall	<i>Ipomoea purpurea</i>	C	6
Mustard, black	<i>Brassica nigra</i>	C	6
Mustard, tumble	<i>Sisymbrium altissimum</i>	C	6
Mustard, wild	<i>Sinapis arvensis</i>	C	6
Nettle, burning	<i>Urtica urens</i>	C	4
Nightshade, black	<i>Solanum nigrum</i>	C	6
Nightshade, cutleaf	<i>Solanum triflorum</i>	C	6
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C	6
Nightshade, hairy	<i>Solanum saccharoides</i>	C	6
Parthenium	<i>Parthenium hysterophorus</i>	C	6
Pennycress, field	<i>Thlaspi arvense</i>	C	6
Pigweed, prostrate	<i>Amaranthus blitoides</i>	C	6
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	6
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	6
Puncturevine	<i>Tribulus terrestris</i>	C	6
Purslane, common	<i>Portulaca oleracea</i>	C	3
Pusley, Florida	<i>Richardia scabra</i>	S	3
Ragweed, common ²	<i>Ambrosia artemisiifolia</i>	C	6
Ragweed, giant	<i>Ambrosia trifida</i>	C	6
Rocket, London	<i>Sisymbrium irio</i>	C	6
Sesbania, hemp	<i>Sesbania exaltata</i>	C	4
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C	6
Sida, prickly	<i>Sida spinosa</i>	C	6
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	6
Sowthistle, annual	<i>Sonchus oleraceus</i>	C	6
Sowthistle, spiny	<i>Sonchus asper</i>	C	6
Spurge, garden	<i>Chamaesyce hirta</i>	C	6
Spurge, prostrate	<i>Chamaesyce humistrata</i>	C	6
Spurge, spotted	<i>Chamaesyce maculata</i>	C	6
Sunflower, common	<i>Helianthus annuus</i>	C	6
Tansymustard, green	<i>Descurainia incana</i>	C	6
Tansymustard, pinnate	<i>Descurainia pinnata</i>	C	6
Thistle, Canada	<i>Cirsium arvense</i>	S ¹	6
Thistle, Russian	<i>Salsola kali</i>	C	3
Velvetleaf	<i>Abutilon theophrasti</i>	C	6
Waterhemp ²	<i>Amaranthus tuberculatus</i>	C	6
Willowweed	<i>Epilobium adenocaulon</i>	C	3

¹ Control of seedling stage and suppression of perennial growth stage² Populations of noted weeds exist that are known to be resistant to burndown applications of **Group 14/Group E** herbicides and will not be controlled by herbicides like **Verdict**. See the **Resistance Management** section for practices to manage and minimize the impact of resistant weeds (e.g. tank mixes or alternation with other herbicide modes of action, crop rotation, and mechanical control).

Mode of Action

Verdict® herbicide combines two active ingredients: saflufenacil, a potent inhibitor of protoporphyrinogen-oxidase belonging to herbicide mode-of-action

Group 14 (WSSA)/Group E (HRAC), and dimethenamid-P, a chloroacetamide belonging to the herbicide mode-of-action **Group 15/Group K₃**. Saflufenacil is rapidly absorbed by roots and foliage. Following inhibition of the protoporphyrinogen-oxidase, plant death is the result of membrane damage. Under active growing conditions, susceptible emerging weed seedlings usually develop chlorotic and necrotic injury symptoms within hours and die within a few days. Susceptible germinating weed seeds usually die as they reach the soil surface or shortly after emergence. Dimethenamid-P is a root-and-shoot inhibitor that controls susceptible weed seedlings before or soon after they emerge from the soil.

Herbicide Resistance Management

While weed resistance to protoporphyrinogen-oxidase-inhibiting herbicides is relatively infrequent, populations of resistant biotypes are known to exist. Resistance management should be part of a diversified weed control strategy that integrates chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, proper fertilizer placement, and optimum seeding rate/row spacing. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant weeds. Herbicide resistance management practices should be considered and include:

Chemical Control

1. Start clean with tillage or an effective burndown herbicide program.
2. **DO NOT** rely on a single herbicide site of action for weed control.
3. Follow labeled application rate and weed growth stage specifications.
4. Avoid application of herbicides with the same site of action more than twice a season.
5. Use tank mixes and sequential applications with other herbicides possessing different sites of action that are also effective on the target weeds.
6. Use crop rotation so crop competition, tillage, or herbicides with alternative modes of action can be used to control weed escapes.

Scouting and Containment

1. Scout fields after herbicide application to identify areas where weed control was ineffective.
2. Control weed escapes with herbicides possessing a different site of action or use a mechanical control measure. Weed escapes should not be allowed to reproduce by seed or to proliferate vegetatively.
3. Contact your **Verdict** supplier and/or your local BASF representative to report weed escapes.
4. Clean equipment before moving to a different field to avoid spread of resistant weeds.

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended.

Crop Tolerance

Field corn, popcorn, processing sweet corn, grain sorghum, and soybean are tolerant to **Verdict** when applied according to label directions as a preplant to preemergence treatment and under normal environmental conditions. Crop injury may occur under stressful growing conditions (e.g. low soil fertility, seedling disease, extreme hot or cold weather, excessive moisture, high soil pH, high soil salt concentration, or drought).

Severe crop injury will result if **Verdict** is applied postemergence (over the top) to corn, sorghum, or soybean.

Application Instructions

Verdict may be applied preplant surface, preplant incorporated, or preemergence to field corn, popcorn, processing sweet corn, grain sorghum, and soybean. Apply **Verdict** only before crop emergence.

Rainfastness - Verdict is rainfast 1 hour after application. Burndown activity may be reduced if rain or irrigation occurs within 1 hour of application.

Application Rate

Application rates of **Verdict** for residual preemergence weed control may vary depending on soil texture and organic matter. Refer to **Table 3** for soil texture groups used in this label.

Table 3. Soil Texture Groups

Coarse	Medium	Fine
Sand	Silt	Sandy clay
Loamy sand	Silt loam	Silty clay
Sandy loam	Loam	Silty clay loam
	Sandy clay loam	Clay loam
		Clay

Refer to the **Crop-specific Information** section for specific application directions and the restrictions and precautions by crop use and pattern.

Application Methods and Equipment

Verdict may be applied by ground or air. Thorough spray coverage is important for optimum weed control and can be improved with proper adjuvant, nozzle, and spray volume selection.

Use and configure application equipment to provide an adequate spray volume, an accurate and uniform distribution of spray droplets over the treated area, and to avoid spray drift to nontarget areas. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that increase rates above the use rates specified in this label.

Verdict® herbicide may be applied using water or sprayable fluid nitrogen fertilizer solutions as the spray carrier. Additionally, **Verdict** may be impregnated on and applied with dry bulk fertilizer.

Aerial Application Requirements

Water Volume. Use 3 or more gallons of water per acre.

Applicators must follow these requirements to reduce the potential of spray drift to nontarget areas from aerial applications:

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the fixed wingspan or 90% of rotor blade diameter.
2. Use low-drift nozzles (straight-stream nozzles, D-8 or larger). **DO NOT** use nozzles producing a mist droplet spray.
3. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.
4. Without compromising aircraft safety, application must be made at a height of 10 feet or less above the crop canopy or tallest plants.
5. **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.
6. Avoid potential adverse effects to nontarget areas by maintaining a 120-foot buffer between the point of direct application and the **closest downwind edge** of sensitive terrestrial habitats (grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Ground Application Requirements

Spray Carrier Volume. Use 3 or more gallons of water per acre or 20 or more gallons of sprayable fluid fertilizer per acre. Thorough coverage of existing vegetation is essential for burndown applications and higher spray volumes may be necessary for better performance.

Applicators must follow these requirements to reduce the potential of spray drift to nontarget areas from ground applications:

1. Apply this product using nozzles that deliver **medium-to-coarse spray droplets** as defined by ASAE standard S-572 and as shown in nozzle manufacturer's catalogs. Flat-fan nozzles are recommended for burndown applications while flood-jet type nozzles are recommended for residual soil surface applications. Nozzles that deliver coarse spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain coverage of target (i.e. weeds or soil surface). **DO NOT** use nozzles that produce fine (e.g. cone) spray droplets.
2. Apply this product only when the potential for drift to adjacent nontarget areas is minimal (e.g. when the wind is **10 MPH or less and is blowing away** from nontarget areas). **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.

3. Avoid potential adverse effects to nontarget areas by maintaining a 60-foot buffer between the application area and the **closest downwind edge** of sensitive terrestrial habitats (grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Ground Application (dry bulk fertilizer)

Verdict may be impregnated or coated onto dry bulk granular fertilizer carriers for residual soil surface application. Impregnation or coating may be conducted by in-plant bulk or on-board systems. Perform the mixing operation in well-ventilated areas.

Addition of a drying agent may be necessary if the fertilizer and herbicide blend is too wet for uniform application because of high humidity, high urea concentration, or low fertilizer use rate. Slowly add the drying agent to the blend until a flowable mixture is obtained. Drying agents are not recommended for use with on-board impregnation systems.

Under some conditions, fertilizer impregnated with **Verdict** may clog air tubes or deflector plates on pneumatic application systems. Mineral oil may be added to **Verdict** before blending with fertilizer to reduce plugging. **DO NOT** use drying agents when mineral oil is used. To avoid separation of **Verdict** and mineral oil mixes in cold temperatures, keep mixture heated or agitated before blending with fertilizer. Mineral oil may be used at in-plant blending stations or on-board injection systems.

Generally, fertilizer application rates of at least 200 lbs to 700 lbs per acre of herbicide and fertilizer blend provide adequate distribution or coverage for **Verdict** across the soil surface. Apply uniformly to the soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at 1/2 rate and overlapped for a full rate offer a more uniform distribution. Use shallow (less than 2 inches) incorporation for improved weed control. Deeper incorporation dilutes the herbicide layer near the soil surface and may result in unsatisfactory weed control.

To calculate the herbicide rate when using dry bulk fertilizer applications:

$$\frac{\text{fl ozs herbicide per acre}}{\text{pounds fertilizer per acre}} \times 2000 = \frac{\text{fl ozs herbicide}}{\text{per ton of fertilizer}}$$

Chemigation Application via Sprinkler Irrigation Systems

Verdict may be applied as a chemigation treatment through sprinkler irrigation systems. Apply this product **ONLY** through a sprinkler irrigation system of the following type: center pivot, end tow, hand move, lateral move, side (wheel) roll, or solid set. **DO NOT apply this product through any other type of sprinkler irrigation system.** Application may be made alone or in tank mixes with other herbicides on this label registered for use in specified sprinkler irrigation systems. Application must be made within specific crop stage timings and product use rates given in the container directions for use label.

Uniform distribution of **Verdict® herbicide**-treated irrigation water is the sole responsibility of the applicator and is required to avoid crop injury, lack of herbicide effectiveness, or illegal pesticide residues in the crop. For calibration questions, contact State Extension Service specialists, equipment manufacturers, or other experts.

Proper calibration is the responsibility of the applicator. The system must be calibrated (with water only) to ensure the amount of **Verdict** applied corresponds to the specified rate. Apply **Verdict** in volume minimums of 0.33 to 0.67 inches of water using the lower volume for coarse-texture soils and the higher volume for fine-texture soils. Applications made in high volumes of water (more than 1 inch) may result in reduced weed control.

Meter herbicide dilution into irrigation water through the entire time of water application for center pivot and lateral move systems. For solid-set and hand-move irrigation systems, apply **Verdict** through the system at the beginning of the set; then follow with additional water to reach volume minimums as listed by soil type. To increase calibration accuracy of injection metering equipment, dilute **Verdict** in a minimum of 3 parts water to 1 part **Verdict**. Maintain agitation in injection nurse tanks to keep a uniform herbicide suspension during application.

Restrictions for chemigation:

1. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
2. **DO NOT** connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
3. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
4. Tail water (runoff water) from chemigation that contains **Verdict** must be recirculated and/or contained in the field in a cistern or holding reservoir from the initial application and/or used only on adjacent, approved crops for which **Verdict** is registered for this type of application.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. It must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
6. The sprinkler chemigation system must contain a functional check valve, vacuum-relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow. In addition, systems must use a metering pump, like a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials compatible with pesticides and capable of being fitted with a system interlock.

7. The sprinkler chemigation system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
8. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Chemigation systems connected to public water systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank before pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section.

Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions, followed by triple rinsing the equipment before and after applying this product.

Spray Drift Management

It is the responsibility of the applicator to avoid spray drift at the application site, especially onto nontarget areas. The interaction of many equipment-related and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The applicator must be familiar with and take into account the information covered in the following spray drift reduction advisory information.

Controlling Droplet Size. The most effective way to reduce drift potential is to apply the largest droplets that provide sufficient coverage and control.

Volume. Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure. DO NOT exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are

needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles. Use the minimum number of nozzles that provide uniform coverage.

Nozzle Type. Use a nozzle type designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets.

Swath Adjustment. When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind. Drift potential is lowest between wind speeds of 3 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. If applying at wind speeds less than 3 mph, the applicator must determine if:

1. Conditions of temperature inversion exist, or
2. Stable atmospheric conditions exist at or below nozzle height.

DO NOT make applications into areas of temperature inversions or stable atmospheric conditions.

NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Wind Erosion. Avoid treating powdery, dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Additives

For optimum burndown activity with **Verdict® herbicide**, an adjuvant system must be used that includes the following:

Adjuvant	Rate
Methylated seed oil (MSO) ¹ or Crop oil concentrate (COC)	1 gal/100 gals (1% v/v) ²
PLUS	PLUS
Ammonium sulfate (AMS) or Urea ammonium nitrate (UAN)	8.5 to 17.0 lbs/100 gals (1% to 2% w/v) or 1.25 to 2.5 gals/100 gals (1.25% to 2.5% v/v)

¹MSO-based adjuvant **MUST** contain at least 60% methylated seed oil. Poor performance may occur with adjuvants containing less than 60% methylated seed oil.

²**DO NOT** use less than 1 pint/A of MSO with low-volume (less than 12.5 gallons/A) aerial or ground applications.

When fluid fertilizer is used as the spray carrier, add 1 pint/A of MSO for optimum burndown activity.

The use of AMS fertilizer is highly recommended when mixing **Verdict** with glyphosate-based herbicides.

DO NOT use a nonionic surfactant (NIS) as a substitute for COC or MSO, or poor performance on broadleaf weeds will occur.

When an adjuvant is to be used with this product, BASF recommends the use of a Chemical Producers and Distributors Association (CPDA) certified adjuvant.

Tank Mixing Information

Verdict may be tank mixed with one or more registered herbicide products according to the specific tank mixing instructions in this label and respective product labels. Refer to the **Crop-specific Information** for tank mixing details. It is the pesticide user's responsibility to ensure that all products in the mixtures are registered for the intended use. Read and follow the applicable restrictions and precautions and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the **Mixing Order** section using 2 teaspoons for each pound or 1 teaspoon for each pint of labeled use rate per acre.
3. Always cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, or fine particles that precipitate to the bottom, or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Maintain constant agitation throughout mixing and application until spraying is completed.

1. **Water** - Fill tank 1/2 to 3/4 full with clean water and start agitation.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.

3. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. **Water-soluble additives** (including dry and liquid fertilizers AMS or UAN)
5. **Water-dispersible products** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products**
7. **Emulsifiable concentrates** (including COC or MSO adjuvants)
8. **Remaining quantity of water**

If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend spray mixture before spraying is resumed. Continue agitation while spraying.

Use Restrictions

- **Maximum seasonal use rate** - Refer to **Crop-specific Information** section for the maximum cumulative amount of **Verdict® herbicide** per cropping season. A cropping season is defined as the period following harvest of the preceding crop through the harvest of the planned or current crop.
- If additional dimethenamid-P is applied, **DO NOT** apply more than a maximum cumulative amount of 0.98 lb ai/A dimethenamid-P per cropping season in grain sorghum, and **DO NOT** apply more than a maximum cumulative amount of 1.125 lbs ai/A dimethenamid-P per cropping season in field corn, popcorn, processing sweet corn, and soybean.
- **DO NOT** apply **Verdict** after crop emergence because severe crop injury will occur.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **Verdict is not for sale, distribution, or use in Nassau and Suffolk counties in New York State.**

Crop Rotation Intervals

Use the following table to determine the proper interval between **Verdict** application and the planting of rotational crops.

Crop	Verdict Use Rate (fl ozs/A)	
	< 19	19 to 25
	Rotational Crop Interval (months after application) ¹	
Alfalfa	7	8
Beans (edible) ²	4	6
Canola (rapeseed)	7	8
Chickpea	4	6
Corn, sweet	3	4
Cotton	6	6
Fruit and nut trees	6	9
Grass (forage, seed) establishment	6	9
Lentil	4	6
Peas (dry field, edible)	4	6
Rice	4	4
Small grains	4	4
Sorghum (grain)	0	1
Soybean ³	4	6
Soybean ³ , KIXOR® Selected	4	6
Sugarbeet	7	9
Sugarcane	7	9
Sunflower	7	9
Cover crops (winter, spring) ⁴	4	6
Other crops	7	9

¹ **DO NOT** include time when the soil is frozen.

² Edible bean refers to blackeyed pea, crowder pea, cowpea, and southern pea. Use the **Other Crops** rotational crop planting interval for beans not specifically listed in this table.

³ The planting interval for these crops and rates is further defined in the respective **Crop-specific Information** section of this label. Use the longer interval within listed ranges for indicated crops grown on coarse-texture soils with organic matter less than 2.0%.

⁴ Cover crops (winter, spring) may be planted after application of **Verdict**, either inter-seeded into the current crop before harvest or after harvest of the current crop. Depending on the sensitivity of the sown cover crop to **Verdict**, stand establishment may be reduced. If cover crops are sown for conservation purposes less than 4 months after **Verdict** application, **DO NOT** harvest as a food or feed crop, and **DO NOT** allow livestock to graze cover crops.

Emergency Replanting Intervals

- Field corn, popcorn, sweet corn, and grain sorghum (according to application rates in **Crop-specific Information**) may be replanted immediately after crop failure (because of environmental factors, including drought, frost, hail, etc.).
- Soybean (according to the application rates in **Crop-specific Information**) may be replanted (according to the intervals in the chart following) after crop failure (because of environmental factors including drought, frost, hail, etc.).

Replanting Intervals to Soybean Following Crop Failure

Soil Description	Verdict® herbicide Application Rate (fl ozs/A)				
	5	7.5	10 to 12	13 to 15	16 to 20
	Replanting Interval (months after application)				
Coarse soils ≤ 2% organic matter	1	1	1.5	3	4
All other soils	0	0.5	1	2	4

- Determine the rotational crop interval for tank mix products and follow the most restrictive interval of all products applied.

Crop-specific Information

This section provides directions for **Verdict** in specific crops. Read product information, mixing, application, weeds controlled, and adjuvant instructions in preceding sections of the label. Read and follow tank mix product labels for restrictions, precautions, instructions, and rotational crop restrictions.

Depending on specific crop application directions, **Verdict** may be applied for residual control of germinating weed seedlings before planting (preplant) or after planting but before crop emergence (preemergence) (refer to **Table 1** for list of weeds controlled) or burndown control of emerged broadleaf weeds (refer to **Table 2** for list of weeds controlled).

Thorough spray coverage is required for control of emerged broadleaf weeds. High populations and/or variations in weed size can prevent adequate spray coverage. Controlling fall-germinated weeds in the spring (e.g. horseweed/marestail) also requires thorough spray coverage. Use higher spray volumes (e.g. 15 to 20 gallons of water per acre) in these situations to increase spray coverage and optimize burndown activity.

Field Corn (grain, seed, silage), Popcorn, and Sweet Corn

Verdict may be applied preplant surface, preplant incorporated, or preemergence to corn. Corn in this label refers to field corn (grown for grain, seed, or silage), popcorn, and sweet corn (processing varieties only, not including sweet corn grown for seed or fresh market varieties). Before applying **Verdict** to seed corn, processing sweet corn, or popcorn, verify the selectivity of **Verdict** on your inbred line or hybrid with your local seed company (supplier) to help avoid potential injury to sensitive inbreds or hybrids.

Application Rate

Verdict can be applied as part of a one-pass or planned sequential (two-pass) weed control program. A one-pass weed control program should be used where no cultivation or postemergence herbicide application is anticipated. One-pass application rates for **Verdict** when applied alone, in tank mix, or sequentially are provided in **Table 4** for field corn and **Table 5** for popcorn and processing sweet corn.

Table 4. Residual Preemergence Rates of Verdict in Field Corn

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse ²	12	13
Medium	18	20
Fine	20	25

¹Refer to **Table 3** for definition of soil texture groups.

²Use on coarse soils with less than 1.5% organic matter may result in crop injury.

Table 5. Residual Preemergence Rates of Verdict in Popcorn and Processing Sweet Corn

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10
Medium	13	15
Fine	15	20

¹Refer to **Table 3** for definition of soil texture groups.

Verdict use rates applied as the residual component of a planned sequential (two-pass) program (see **Table 6** and **Table 7**) will provide control or suppression of listed weeds (**Table 1**) through early-to-mid season. For full-season weed control, apply a labeled postemergence treatment of **Status® herbicide** plus glyphosate as the sequential component (this applies to field and popcorn, not sweet corn).

Table 6. Residual Preemergence Rates of Verdict® herbicide in a Planned Sequential Program¹ in Field Corn and Popcorn

Soil Texture ²	Rate by Soil Texture (fl ozs/A)
Coarse	10 to 12
Medium	13 to 15
Fine	16 to 18

¹ Application rates in **Table 6** eliminate early season weed interference until cultivation or a labeled postemergence herbicide is applied. However, application rates in **Table 4** should be applied if **Verdict** is being used to control weeds resistant to another herbicide in the tank mix or sequential weed control program.

² Refer to **Table 3** for definition of soil texture groups.

Table 7. Residual Preemergence Rates of Verdict in a Planned Sequential Program¹ in Processing Sweet Corn

Soil Texture ²	Rate by Soil Texture (fl ozs/A)
Coarse	10 (DO NOT apply on coarse soils with ≤ 3% organic matter)
Medium	10
Fine	10

¹ Application rates in **Table 7** eliminate early season weed interference until cultivation or a labeled postemergence herbicide is applied. However, application rates in **Table 5** should be applied if **Verdict** is being used to control weeds resistant to another herbicide in the tank mix or sequential weed control program.

² Refer to **Table 3** for definition of soil texture groups.

Application Timing

Fall Application

For use only in Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin
Verdict may be applied in the fall to control weeds in conventional, minimum tillage, or no-till corn production systems planted the following spring. Apply from 20.0 to 25.0 fluid ounces of **Verdict** per acre to medium-texture and fine-texture soils with more than 2.5% organic matter. Fall applications must be made after October 1.

Broadcast surface apply **Verdict** in the fall after crop harvest when soil temperatures at the 4-inch depth are sustained at less than 55° F and before the ground freezes. Tillage operations may be conducted before or after applying **Verdict**. When following an application, tillage should be no more than 2-inches to 3-inches deep to uniformly incorporate the herbicide into the upper soil surface. When a sequential application program (fall application followed by spring application of **Verdict**) is used, the maximum combined rate of **Verdict** that may be applied is 25.0 fluid ounces per acre per crop season.

Early Preplant Surface Application (15 to 30 days before planting)

Use application rates in **Table 4** when making early preplant surface applications, using the highest application rate for a given soil texture. Early preplant surface applications are not recommended on coarse soils, in areas where average annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches, or for popcorn or processing sweet corn. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Early preplant surface applications may be applied as part of a split application program where applications are made as part of the application timings described in this label. However, the cumulative total of sequential application rates must not exceed the maximum labeled rate for a given soil texture.

Preplant Surface and Preplant Incorporated Application (up to 14 days before planting)

Verdict can be applied at use rates specified in **Table 4**, **Table 5**, **Table 6**, or **Table 7** to the soil surface or incorporated up to 14 days before planting on all soil types. For preplant incorporated applications, apply **Verdict** and incorporate into the upper soil surface (1 to 2 inches). Use a harrow, rolling cultivator, field cultivator, or other implement for uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Preemergence Surface Application

Apply **Verdict** at use rates specified in **Table 4**, **Table 5**, **Table 6**, or **Table 7** as a broadcast treatment to the soil surface after planting and before crop emergence. **Verdict** must be applied before crop emergence or injury will occur.

Burndown plus Residual Weed Control

In addition to residual weed control at any of the application timings previously described, **Verdict** also provides burndown of emerged broadleaf weeds listed in **Table 2**. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity. Burndown control of emerged grass weeds or additional broadleaf weeds not listed on the label requires a tank mix with another herbicide (like glyphosate).

Residual preemergence application rates of **Verdict** can follow a fall or early preplant burndown application of **Sharpen®** herbicide. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources. A minimum of 14 days is required between **Verdict** and **Sharpen** applications.

Burndown Weed Control Only

If limited or no residual broadleaf weed control is desired, **Verdict** can be applied at 5.0 fl ozs/A (all soil types) with an adjuvant system any time before corn emergence for burndown of broadleaf weeds listed in **Table 2**. A burndown application of **Verdict** can be followed by residual rates of **Verdict** (**Table 4**, **Table 6**, or **Table 7**) or **Sharpen**.

Separate sequential applications by at least 14 days. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources.

Enhanced Burndown in Seed Corn. Apply **Verdict®** herbicide preplant surface or preemergence at 5.0 to 10.0 fl ozs/A with an adjuvant system for enhanced burndown broadleaf weed control in seed corn before crop emergence. **DO NOT** apply more than 5.0 fl ozs/A on coarse soils. A sequential application of **Verdict** may be made with a minimum of 30 days between applications. **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** per cropping season in seed corn.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** after corn emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result. **Verdict** may be applied with all other classes of at-planting insecticides including neonicotinoids and pyrethroids.

EXCEPTION: **Verdict** may be applied when **Aztec® 2.1% Granular Insecticide**, **AZTEC® 4.67 G granular insecticide**, **Fortress® 5G granular insecticide**, or **SmartChoice™ 5G granular insecticide** is applied at planting as a band, T-band, or infurrow.

- **DO NOT** apply more than a maximum cumulative amount of 0.134 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.
- Corn, popcorn, or sweet corn forage and silage must not be harvested, fed, or grazed sooner than 80 days after application.
- There is no required (preharvest) interval between a preplant surface, preplant incorporated, or preemergence application of **Verdict** and the harvest of field corn grain, popcorn, seed corn, and sweet corn ears. Corn forage, stover, and sweet corn cannery waste may be fed to livestock after harvest.

Crop-specific Precautions

- **Verdict** application may result in delayed corn emergence and stunting under certain environmental conditions including cool temperatures, excessive rainfall/irrigation, and/or persistent wet soil conditions occurring after application.
- Ensure the corn seed row is closed. Soil conditions that cause poor seed furrow closure and coverage may result in delayed corn emergence or stunting.
- **Verdict** applied to processing sweet corn planted at a depth of 1/2 inch or less may result in crop injury.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity®** herbicide
- **Sharpen®** herbicide
- **Status®** herbicide
- **Zidua®** herbicide
- atrazine
- glyphosate (e.g. **Roundup®** herbicide)

NOTE: Refer to tank mix product labels to confirm the respective tank mix products are registered for use on specific corn types; not all corn products are registered for use on seed corn, popcorn, and processing sweet corn.

* Refer to **Tank Mixing Information** section for additional instructions.

Fallow

Verdict may be used as a burndown treatment to control broadleaf weeds at any time of the year during the fallow period following crop harvest and before the following crop is planted.

Application Rate and Timing

Apply **Verdict** as a broadcast burndown spray at 5.0 to 10.0 fl ozs/A plus recommended adjuvants (refer to **Additives** section for details). For best product performance, apply **Verdict** when broadleaf weeds are small and actively growing (refer to **Table 2** for list of weeds controlled). Thorough coverage of existing weeds is essential and higher spray volumes may be needed for best performance.

Sequential applications may be made with a minimum of 14 days between applications; **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.

For residual weed control, **Verdict** may be applied at 10.0 to 25.0 fl ozs/A.

Specific rotational crop intervals must be observed between an application of **Verdict** and planting of the following crop (see **Crop Rotation Intervals** section for crop rotation restrictions).

Tank Mixes

Broad-spectrum burndown control of grass weeds and/or additional broadleaf weeds requires a tank mix with another herbicide. **Verdict** may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity**
- **Distinct®** herbicide
- glyphosate (e.g. **Roundup**)

* Refer to **Tank Mixing Information** section for additional instructions.

Grain Sorghum

Verdict® herbicide may be applied preplant surface, preplant incorporated, or preemergence to grain sorghum. All **Verdict** applications must only be made to sorghum seed that has been properly treated by the seed company with an approved chloroacetamide herbicide safener or severe injury may occur.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf wrapping of grain sorghum. Grain sorghum normally outgrows these symptoms within 10 to 14 days.

Application Rate

Application rates for **Verdict** in grain sorghum depend on use pattern.

See **Table 8** for application rates in grain sorghum for **Verdict** when applied alone, in tank mix, or sequentially.

Table 8. Residual Rates of Verdict in Grain Sorghum

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ¹	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10
Medium	13	15
Fine	15	20

¹ Refer to **Table 3** for definition of soil texture groups.

For grain sorghum grown in Nebraska and South Dakota, see **Table 9** for application rates for **Verdict** when applied alone, in tank mix, or sequentially.

Table 9. Residual Rates¹ of Verdict in Grain Sorghum in Nebraska and South Dakota

Rate by Soil Texture and Organic Matter Content (fl ozs/A)		
Soil Texture ²	Organic Matter	
	≤ 1.5%	> 1.5%
Coarse	DO NOT USE	10 to 12
Medium	DO NOT USE	13 to 15
Fine	DO NOT USE	16 to 18

¹ Application rates in **Table 9** eliminate early season weed interference. Full-season weed control requires a labeled tank mix partner, sequential postemergence herbicide application, and/or cultivation.

² Refer to **Table 3** for definition of soil texture groups.

Application Use Rate for Tank Mix Program

For grain sorghum grown in all states, apply **Verdict** at 10.0 fl ozs/A in a tank mix with other dimethenamid-P-containing herbicides; see **Table 10** for use rates.

Table 10. Use Rates for Dimethenamid-P when Tank Mixed with Verdict in Grain Sorghum^{1,4}

Use Rate of Dimethenamid-P ³ by Soil Texture and Organic Matter Content (lb ai/A)		
Soil Texture ²	Organic Matter	
	< 3%	≥ 3%
Coarse	0.19 to 0.28	0.28 to 0.47
Medium	0.28 to 0.47	0.47 to 0.61
Fine		

¹ Application rates in **Table 10** eliminate early season weed interference.

² Refer to **Table 3** for definition of soil texture groups.

³ Refer to the **Outlook® herbicide** label for conversion of use rates to fl ozs/A.

⁴ A tank mix with **atrazine** may also be applied. Refer to atrazine product labels for additional details on use rates in grain sorghum. Full-season weed control requires atrazine up to the maximum atrazine rate allowed for the soil texture and/or field.

Application Timing

Early Preplant Surface Application (15 to 30 days before planting)

Use application rates in **Table 8**, **Table 9**, and **Table 10** when making early preplant surface applications, using the highest application rate for a given soil texture. Early preplant surface applications are not recommended on coarse soils or in areas where average annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Early preplant surface applications may be applied as part of a split application program where applications are made as part of the application timings described in this label. However, the cumulative total of sequential application rates must not exceed the maximum labeled rate for a given soil texture.

Preplant Surface and Preplant Incorporated Application (up to 14 days before planting)

Verdict can be applied at use rates specified in **Table 8**, **Table 9**, and **Table 10** to the soil surface or incorporated up to 14 days before planting on all soil types. For preplant incorporated applications, apply **Verdict** and incorporate into the upper soil surface (1 to 2 inches). Use a harrow, rolling cultivator, field cultivator, or other implement for uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Preemergence Surface Application

Apply **Verdict** at use rates specified in **Table 8**, **Table 9**, and **Table 10** as a broadcast treatment to the soil surface after planting and before crop emergence. **Verdict** must be applied before crop emergence or injury will occur.

Burndown plus Residual Weed Control

In addition to residual weed control at any of the application timings previously described, **Verdict® herbicide** also provides burndown of emerged broadleaf weeds listed in **Table 2**. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity. Burndown control of emerged grass weeds or additional broadleaf weeds not listed on the label requires a tank mix with another herbicide (like glyphosate).

Residual preemergence application rates of **Verdict** can follow a fall or early preplant burndown application of **Sharpen® herbicide**. However, **DO NOT** exceed the cropping seasonal maximum cumulative amount of saflufenacil per acre from all product sources. A minimum of 30 or 60 days is required between **Verdict** applications and **Sharpen** applications (depending on **Sharpen** use rate; see **Sharpen** product label).

Burndown Weed Control Only

Verdict can be applied at 5.0 to 10.0 fl ozs/A (all soil types) with an adjuvant system (refer to the **Additives** section for details) any time before sorghum emergence for burndown of weeds listed in **Table 2**. A burndown application of **Verdict** can be followed by residual rates of **Verdict**. Sequential applications must be separated by at least 14 days. However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** after grain sorghum emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred or severe injury may result.
- **DO NOT** apply more than a maximum cumulative amount of 0.111 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply more than a maximum cumulative amount of 25.0 fl ozs/A of **Verdict** per cropping season.
- **Verdict** is not registered for use on sweet or forage sorghum.
- Sorghum forage and silage can be harvested, fed, or grazed 70 or more days after application.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity® herbicide** (preplant only)
- **Outlook® herbicide**
- **Sharpen**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

* Refer to **Tank Mixing Information** section for additional instructions.

Soybean

Verdict may be applied in the fall and/or in the spring as a preplant or preemergence burndown application in conventional and reduced-till or no-till soybean for broadleaf weed control. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf chlorosis/necrosis of soybean. Soybean normally outgrows these symptoms within 10 to 14 days.

Not for use in soybean in California.

Application Rate and Timing

Fall Application

Apply **Verdict** at 5.0 to 10.0 fl ozs/A (0.022 to 0.044 lb ai/A of saflufenacil) for burndown broadleaf weed control after the prior crop is harvested. For residual weed control, **Verdict** may be applied up to 15.0 fl ozs/A. Application must be made before first killing frost. Fall application can be made to all soil types.

Spring Application

For all spring applications of **Verdict**, refer to **Soybean Planting Interval** information for minimum planting intervals.

Apply **Verdict** early preplant through preemergence at 5.0 fl ozs/A for burndown broadleaf weed control before crop emergence.

For early preplant enhanced burndown broadleaf weed control, apply **Verdict** at 7.5 or 10.0 fl ozs/A.

Sequential Application

Apply **Verdict** following a fall or early preplant burndown application of **Sharpen OR Verdict** (at 5.0 to 10.0 fl ozs/A). However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources; see **Crop-specific Restrictions** section. A minimum of 30 days and 60 days is required between product applications totaling 0.044 lb ai/A and 0.067 lb ai/A of saflufenacil, respectively.

Soybean Planting Interval

Depending on **Verdict** use rate, soil texture, and organic matter, an interval between **Verdict** application and planting may be required (see **Table 11** and **Table 12**). This interval must be observed before planting soybean or crop injury may occur.

Table 11. Minimum Soybean Planting Intervals

Minimum Preplant Interval (days) Required between Verdict® herbicide Application and Soybean Planting		
Verdict Use Rate (fl ozs/A)	Soil Texture ¹	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	30	0
7.5	30	14
10.0	44	30

¹ Refer to **Table 3** for definition of soil texture groups.

Table 12. Minimum Soybean Planting Intervals when Verdict is Applied with other Group 14/Group E Herbicides¹

Minimum Preplant Interval (days) Required between Verdict Application and Soybean Planting when Tank Mixed or Sequentially Applied with a Group 14/Group E Herbicide ²		
Verdict Use Rate (fl ozs/A)	Soil Texture ³	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	30	14*
7.5	30	30
10.0	44	30

¹ Refer to other product's label and follow the most restrictive interval.

² **Group 14/Group E** herbicides including sulfentrazone or flumioxazin

³ Refer to **Table 3** for definition of soil texture groups.

*Interval for reduced-till and no-till soybean only. Interval for conventional-till soybean is 30 days.

Crop-specific Restrictions

- **DO NOT** apply **Verdict** when soybean has reached the cracking stage or after emergence or severe crop injury will occur.
- **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** (0.089 lb ai/A of saflufenacil) per cropping season. Sequential applications **MUST** be separated by at least 30 days.
- **DO NOT** apply more than a maximum cumulative amount of 0.089 lb per acre of saflufenacil from all product sources per cropping season.
- **DO NOT** apply **Verdict** within 30 days of planting where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result.
- **DO NOT** graze or feed forage, hay, or straw to livestock.

Crop-specific Precautions

- Ensure the seed row is sufficiently covered with soil to avoid washing and concentration of the herbicide in the seed zone.
- Always use the most restrictive preplant interval of all inclusive herbicides when applying **Verdict** as part of a tank mix.
- Other **Group 14/Group E** herbicides labeled for postemergence application in soybean may be used 14 days or more after soybean emergence. Refer to other products' labels for use directions.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity®** herbicide (preplant only)
- **Extreme®** herbicide
- **Prowl® H2O** herbicide
- **Pursuit®** herbicide
- **Sharpen®** herbicide
- **Zidua®** herbicide
- glyphosate (e.g. **Roundup®** herbicide)

* Refer to the **Tank Mixing Information** section for additional instructions.

Soybean (only Kixor® Selected varieties)

Use directions in this section are only intended for **Kixor® Selected soybean varieties**. Contact your local BASF representative or go to <http://www.agproducts.basf.us/products/kixor-selected-soybean-varieties.html> for a full list of current **Kixor® Selected soybean varieties**.

Verdict may be applied in fall and/or in spring as a preplant or preemergence burndown application in conventional and reduced-till or no-till soybean for broadleaf weed control; refer to **Table 2** for list of weeds controlled. An adjuvant system (refer to **Additives** section for details) is required for optimum burndown activity.

Under high soil moisture and/or cool conditions, **Verdict** application may cause temporary stunting or leaf chlorosis/necrosis of soybean. Soybean normally outgrows these symptoms within 10 to 14 days.

Not for use in soybean in California.

Application Rate and Timing

Fall Application

Apply **Verdict** at 5.0 to 10.0 fl ozs/A (0.022 to 0.044 lb ai/A of saflufenacil) for burndown broadleaf weed control after the prior crop is harvested. For residual control, **Verdict** may be applied up to 15 fl ozs/A. Application must be made before first killing frost. Fall application can be made to all soil types.

Spring Application

For all spring applications of **Verdict® herbicide**, refer to **Soybean Planting Interval** information for minimum planting intervals.

Apply **Verdict** early preplant through preemergence at 5.0 fl ozs/A for burndown broadleaf weed control before crop emergence.

Apply **Verdict** early preplant at 10.0 fl ozs/A for enhanced burndown broadleaf weed control.

Sequential Application

Apply **Verdict** following a fall or early preplant burndown application of **Sharpen® herbicide OR Verdict** (at 5.0 to 10.0 fl ozs/A). However, **DO NOT** apply more than the cropping seasonal maximum cumulative amount per acre of saflufenacil from all product sources; see **Crop-specific Restrictions** section. A minimum of 30 days and 60 days is required between product applications totaling 0.044 lb ai/A and 0.067 lb ai/A of saflufenacil, respectively.

Soybean Planting Interval

Depending on **Verdict** use rate, soil texture, and organic matter, an interval between **Verdict** application and planting may be required (see **Table 13**) or crop injury may occur.

Table 13. Minimum Kixor® Selected Soybean Planting Intervals

Minimum Preplant Interval (days) Required between Verdict Application and Planting of Kixor® Selected Soybean Varieties		
Verdict Use Rate (fl ozs/A)	Soil Texture¹	
	Coarse Soils with ≤ 2.0% Organic Matter	All Other Soils
5.0	0	0
10.0	30	0

¹ Refer to **Table 3** for definition of soil texture groups.

Crop-specific Restrictions

- **DO NOT** apply more than a maximum cumulative amount of 20.0 fl ozs/A of **Verdict** (0.089 lb ai/A of saflufenacil) per cropping season. Sequential applications **MUST** be separated by at least 30 days.
- **DO NOT** apply more than a maximum cumulative amount of 0.089 lb ai/A of saflufenacil per cropping season in soybean from all product sources.
- **DO NOT** apply **Verdict** when soybean has reached the cracking stage or after emergence or severe crop injury will occur.
- **DO NOT** apply **Verdict** within 30 days of planting where an at-planting application of an organophosphate or carbamate insecticide(s) is planned and/or has occurred because severe injury may result.

- Always use the most restrictive preplant interval of all inclusive herbicides when applying **Verdict** as part of a tank mix.
- **DO NOT** graze or feed forage, hay, or straw to livestock.
- **DO NOT** apply **Verdict** with other products containing **Group 14/Group E** herbicides (including sulfentrazone or flumioxazin) as a tank mix or a sequential spring application within 30 days of planting because crop injury may result.

Crop-specific Precautions

- Ensure the seed row is sufficiently covered with soil to avoid washing and concentration of the herbicide in the seed zone.
- Other **Group 14/Group E** herbicides labeled for postemergence application in soybean may be used 14 days or more after soybean emergence. Refer to other products' labels for use directions.

Tank Mixes

Verdict may be tank mixed* or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Clarity® herbicide** (preplant only)
- **Sharpen**
- glyphosate (e.g. **Roundup® herbicide**)

* Refer to the **Tank Mixing Instructions** section for additional instructions.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

1108

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Aztec is a registered trademark of Bayer.

Fortress is a registered trademark of AMVAC Chemical Corporation.

SmartChoice is a trademark of AMVAC Chemical Corporation.

Roundup is a registered trademark of Monsanto Technology LLC.

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007969-00279.20170828b.NVA 2017-04-320-0031
Supersedes: NVA 2015-04-320-0179

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

 **BASF**
We create chemistry

Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 5/3/2018 6:42:59 PM
To: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]
Subject: RE: Additional Xtendimax confirmatory data

Hi Tom,
Sending a quick note that your email was received. I will be in touch with any questions.
Thanks.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: MARVIN, THOMAS [AG/1920] [mailto:thomas.marvin@monsanto.com]
Sent: Thursday, May 03, 2018 2:27 PM
To: Kenny, Daniel <Kenny.Dan@epa.gov>; Baris, Reuben <Baris.Reuben@epa.gov>
Subject: Additional Xtendimax confirmatory data

Dan, Reuben: Monsanto submitted additional confirmatory data last Friday through the e-portal (see attached cover letter and portal summary). These data provide additional support for EPA's registration of Xtendimax, and include: a new vapor phase endpoint study (MRID 50578901), a new field volatility study for the tank mix of Xtendimax and Roundup PowerMax herbicide (glyphosate potassium salt; MRID 50578902), and air dispersion modeling (AERMOD/PERFUM; MRID 50578902) that is based on flux measurements from the new Xtendimax and Roundup PowerMax field volatility study. Of particular note:

1. The vapor phase endpoint study identifies a more refined dicamba air concentration no effect endpoint of 138 ng/m³. As you may recall, the prior vapor phase endpoint study was conducted with a wide spacing in testing levels: 17.7 ng/m³, 539 ng/m³, 1002 ng/m³, up to 3059 ng/m³. As a result, there was a large interval between the identified NOAEC (17.7 ng/m³) and LOAEC (539 ng/m³). (Gavlick, 2016; MRID 49925703). The new vapor phase endpoint study used a more refined progression of testing levels that were between the prior NOAEC and LOAEC to more precisely identify the actual NOAEC for Xtendimax.
2. The field volatility study (MRID 50578902) results, in tandem with air dispersion modeling (MRID 50578903), confirm that dicamba air concentration for the combination of Xtendimax and glyphosate remain below both the initial and the refined no effect endpoints for dicamba air concentrations.

In combination, these three additional pieces of confirmatory information indicate that there is a substantially larger margin of safety for potential off-target movement of dicamba due to volatility than previously considered during EPA's initial volatility assessment. Please let me know if you have any questions or would like to discuss further.

Thanks,

Tom

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846

Desk: 202-383-2851

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Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 5/3/2018 4:22:10 PM
To: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]
CC: Schmid, Emily [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c06b35a5f814370b9a92d394f969332-Hartman, Emily]
Subject: EPA comments on Dicamba Volatility Protocol
Attachments: EPA comments on Monsanto Dicamba AZ Volatility Protocol 05032018.pdf

Hi Tom,
Attached are the comments that have been compiled based on the protocol you submitted April 13, 2018. Please let me know if you have any questions.
Thank you.
Reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356

From: MARVIN, THOMAS [AG/1920] [mailto:thomas.marvin@monsanto.com]
Sent: Thursday, May 03, 2018 7:41 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: RE: Protocol

Thanks Reuben.

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846
Desk: 202-383-2851

From: Baris, Reuben [mailto:Baris.Reuben@epa.gov]
Sent: Wednesday, May 02, 2018 8:21 PM
To: MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com>
Subject: Re: Protocol

Sorry Tom. It's gotten even crazier in our shop...hard to believe, but hopefully I can fill you in when I have a moment. I do have comments for you. With higher priorities I haven't been able to get them to you. I'll pull it together tomorrow.

Sent from my iPhone

On May 2, 2018, at 5:07 PM, MARVIN, THOMAS [AG/1920] <thomas.marvin@monsanto.com> wrote:

Reuben,

Not sure if you expect to have any feedback, but wanted to let you know that we are scheduled to begin spraying trials next week.

Thanks,

Tom

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846
Desk: 202-383-2851

From: MARVIN, THOMAS [AG/1920]
Sent: Friday, April 13, 2018 9:51 AM
To: Baris, Reuben <Baris.Reuben@epa.gov>
Subject: Protocol

Reuben,

Please find attached the confidential protocol for the primary field experiments that will begin soon—as mentioned we expect the field to be planted by next week. Any additional feedback within the next 2 weeks (in time to make adjustments) would be appreciated. Also happy to connect you and any other EPA reviewers directly with our scientists at any time for any questions/discussion.

Thanks again,

Tom

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 202-676-7846
Desk: 202-383-2851

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**Dicamba Protocol: Study Number STC-2018-0088, Off-target Movement of a Spray Solution
Containing MON 76980 + MON 79789 + Intact – Arizona**

EPA Comments

1. The protocol indicates that the applications will be made to non-tolerant soybean. If the application of dicamba to non-tolerant soybean damages the crop and reduces the leaf surface area, this could reduce the amount of surface area for dicamba volatilization. As a result, how representative the emission rates being estimated are to those from a dicamba tolerant soybean will be uncertain. Both the one-page summary of the study, as well as the presentation provided on April 5th, indicated the study would use tolerant soybean. EPA recommends that dicamba tolerant soybean be used, if possible.
2. Given the size of the field, the meteorological station for the flux monitoring should be placed near the concentration profile monitoring station and not on the field edge. The purpose of the met station is to provide a wind speed profile that corresponds to the concentration profile. If it's placed 250 m away from the concentration sampler, especially if a crop is present, it may not represent the wind profile on the field.
3. Tank mix should be analyzed for pH.
4. Will the off-field samplers use a prefilter with the PUF for the first sampling period to differentiate particles from vapors, as the samplers will be turned on just after application?
5. Height of soybean plants on treated field should be reported to confirm that concentration and deposition sampler heights can be confirmed.
6. EPA recommends placing additional upwind sample collectors near the "control" plants as well as at all the upwind transects (not just the 30m upwind transect as proposed in the study protocol) to ensure that controls are unexposed to dicamba residues that may have drifted from either spray drift or volatility due to changing wind conditions after application.
7. The proposed replication in the study protocol is adequate for control plants (10 sets of 10 plants). However, further consideration of replication is suggested regarding both the upwind and especially the downwind transects. The study protocol suggests 3 downwind transects, with 10 plants at each distance and 2 upwind transects. It is noted that OCSPP 850.4150 recommends a minimum of either 6 replicates (with at least 5 plants each) or 4 replicates (with at least 10 plants each).
8. General comment on site selection: EPA is concerned that this field location in Arizona is not representative of locations and conditions that tend to favor volatility or where incidents have been reported. Given the differences in geographical, meteorological, and soil conditions in Arizona versus the mid-south (where the majority of incidents have been reported), EPA may have limited utility in bridging results of the Arizona study to other parts of the country.

Message

From: Baris, Reuben [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A0181E3F02A246FC915A4AF026E249FC-BARIS, REUBEN]
Sent: 4/26/2017 7:57:29 PM
To: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]
CC: Schmidt, Daria [daria.schmidt@pioneer.com]
Subject: FIFRA 2(ee)(6) finding
Attachments: FIFRA Determination - Dicamba-Treated Soybeans SIGNED.pdf

Hi Tom,

Please find the attached memorandum signed by The Administrator. This has been communicated to OECA and will be sent to all relevant regional offices.

Let me know if you have any questions.

Thank you.

reuben

REUBEN BARIS | PRODUCT MANAGER, TEAM 25 | HERBICIDE BRANCH

U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF PESTICIDE PROGRAMS | (703) 305-7356



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

DATE: April 21, 2017

MEMORANDUM

SUBJECT: Determination Under FIFRA Section 2(ee)(6) Concerning An Obsolete Label Prohibition Against Food/Feed Use of Dicamba-Treated Soybeans That Conform To Applicable Tolerances

FROM: Wendy Cleland-Hamnett
Acting Assistant Administrator

A handwritten signature in black ink, reading "Wendy C. Hamnett", is written over the printed name of the Acting Assistant Administrator.

TO: E. Scott Pruitt
Administrator

ISSUE

Should the U.S. Environmental Protection Agency (EPA) make a statutory finding under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 2(ee)(6), 7 U.S.C. §136(ee)(6) that the use of a finite quantity of soybean grain harvested from dicamba-treated soybean crops (approximately 2.5 million bushels) is consistent with the purpose of FIFRA and, for that reason, should be allowed to be used for food and feed, notwithstanding a now obsolete label prohibition against such use?

OVERVIEW

Background

Monsanto is both a pesticide registrant and a seed producer. From 2008 until 2016, Monsanto and their licensees were building inventory of soybean seed tolerant to the herbicide dicamba in anticipation of marketing dicamba-resistant soybean seed to agricultural producers. The production program relied upon treating soybean crops with the herbicide dicamba pursuant to a time-limited Seed Production Label approved by the EPA under FIFRA in 2013. That label permitted application at higher rates and at later growth stages than had been permitted by existing dicamba labels. The Seed Production Label expired in 2016. Because the EPA did not have data in 2013 to support a determination that the pesticide residues on soybeans treated pursuant to the Seed Production Label would meet the safety standards of the Federal Food, Drug and Cosmetic

Act (FFDCA) the EPA included, in agreement with Monsanto, Seed Production Label provisions prohibiting use of the treated soybeans for food or feed. This Seed Production Label met Monsanto's immediate need to produce new dicamba-tolerant soybean seed inventory while the EPA determined if the use of dicamba on dicamba-resistant soybean met the FFDCA safety standards for residues in soybean grain. In November, 2016, the EPA determined that the expanded use of dicamba on dicamba-resistant soybean seed met the existing tolerance for residues in soybean grain, and granted new registrations for dicamba products consistent with the use directions of the Seed Production Label.

Request for Relief

On March 2, 2017, Monsanto submitted to the Office of Enforcement and Compliance Assurance (OECA) a request for relief and a "No Action Assurance" allowing Monsanto and its affiliates to release into food/feed commodity channels approximately 2.5 million bushels of soybean grain that had been treated pursuant to the Seed Production Label. Residue tests of the soybean grain treated pursuant to the Seed Production Label show dicamba residues to be well below the tolerance level.

Monsanto asserts that the provisions of the Seed Production Label restricting the distribution or release of seed and grain into commodity channels are obsolete and no longer necessary. Monsanto asserts that because the soybeans at issue are well below the approved tolerances, they pose no risk to human or animal health, and that requiring destruction of such grain is against the public interest because it would cause unnecessary food waste and needless environmental impact. Monsanto notes that applying for a label amendment to address this problem is impossible because the Seed Production Label was a time-limited registration that expired in 2016.

FIFRA Section 2(ee)(6)

FIFRA section 2(ee)(6), 7 U.S.C. §136(ee)(6), authorizes the Administrator to allow use of a registered pesticide that might otherwise be considered inconsistent with the pesticide's labeling if he determines that use of the pesticide is "consistent with the purposes of FIFRA." In essence, with a section 2(ee)(6) finding in place, a use of a registered pesticide that would otherwise be considered a violation of FIFRA would be lawful, provided the conditions of the section 2(ee)(6) finding are met.

Summary of Action

Inasmuch as the EPA has now determined that the soybean treated pursuant to the Seed Production Label meets the pesticide residue tolerance established in 40 CFR 180.277(a)(3), the Office of Chemical Safety and Pollution Prevention (OCSPP) is proposing to allow Monsanto and its affiliates to release up to 2.5 million bushels of existing stocks of dicamba-treated soybean grain into commodity channels for food and feed use under the authority of FIFRA Section 2(ee)(6). This determination, should you approve, would waive the expired Seed Production Label's prohibition against food/feed use of dicamba-treated soybeans, and affirmatively authorize the

treated soybean seed for food and feed uses, allowing the nearly 2.5 million bushels of soybean grain to enter commodity channels.

IMPACTS

This finding under FIFRA Section 2(ee)(6) would have no present safety concerns since the Agency has determined that residues of dicamba on soybean grain resulting from application conforming to the Seed Production Label meets the FFDCA safety standards, and conforms to the tolerance established in 40 CFR 180.277(a)(3). Allowing food and feed use of these existing stocks of soybeans that comply with the tolerance is reasonably expected to produce greater benefit to society than requiring their disposal as wastes.

INTERNAL REVIEW

The Office of General Counsel and the OECA have reviewed this analysis and concur with the OCSPP's proposal.

OMB TRANSACTION

This action is not subject to review by the Office of Management and Budget (OMB) under E.O. 12866, and was not otherwise shared with OMB for informal review or informational purposes.

ANTICIPATED EXTERNAL REACTION

Interested audiences include state pesticide agencies, select federal agencies (for example, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, and the Association of American Pesticide Control Officials). The OCSPP expects each of these groups to be supportive of this action. Organizations that generally oppose genetically-modified foods can be expected to object to this action.

RECOMMENDATION

The Office of Chemical Safety and Pollution Prevention recommends that the Administrator make a statutory determination under FIFRA Section 2(ee)(6) that allows the use of the dicamba-treated soybean seed for food and feed.

DECISION

After considering the issue and facts presented in this memo, I have determined that food and feed use of up to 2.5 million bushels of soybean grain treated with dicamba pursuant to the Seed Production Label approved by the EPA on September 18, 2013, is consistent with the purposes of FIFRA. Pursuant to the authority in FIFRA section 2(ee)(6), Monsanto, its affiliates, and their licensee (DuPont Pioneer) may each release, sell and distribute for food and feed use certain quantities of soybean grain previously treated with dicamba in accordance with the Seed Production Label. The soybean grains subject to this order are detailed in the letters from Monsanto to the Agency (dated April 11, 2017) and DuPont Pioneer to the Agency (dated April 12, 2017).

Any provision of the Seed Production Label inconsistent with this order is hereby waived.

Approved:



E. Scott Pruitt, Administrator

Date: APR 26 2017

Disapproved:

E. Scott Pruitt, Administrator

Date: _____

Appointment

From: Keigwin, Richard [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=151BAABB6A2246A3A312F12A706C0A05-RICHARD P KEIGWIN JR]
Sent: 8/17/2016 10:15:00 PM
To: Keigwin, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=151baabb6a2246a3a312f12a706c0a05-Richard P Keigwin Jr]; Goodis, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=50ed0b92dc4945b7a808fe8dbc9224f0-Michael Goodis]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]; Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]; Cowles, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=684502c4acad4894b1fed6fae1c6d74d-Cowles, James]; Ada M Breaux [ada.breaux@basf.com]; John J Arthur [john.arthur@basf.com]; Richard L Braddock [richard.braddock@basf.com]
Subject: Meeting with BASF
Location: S12621
Start: 9/8/2016 1:00:00 PM
End: 9/8/2016 2:00:00 PM
Show Time As: Busy

Ada, John and Richard,

Please call Personal / Ex. 6 when you arrive, and someone will meet you in the lobby.

Meeting Background below:

From: Jeffrey H Birk [mailto:jeffrey.birk@basf.com]
Sent: Friday, August 05, 2016 3:19 PM
To: Rowland, Grant <Rowland.Grant@epa.gov>
Cc: Ada M Breaux <ada.breaux@basf.com>; John J Arthur <john.arthur@basf.com>; Richard L Braddock <richard.braddock@basf.com>
Subject: Proposed meeting with BASF

Hello Grant,

Ada Breaux, has been speaking with Dan Kenny, and they agreed that it might be best if BASF could get together with a small group from EPA to talk through the pending DT use registration and Engenia herbicide. I can send a proposed agenda next week, but it would include a brief overview of what BASF has been doing to address concerns about dicamba volatility and potential synergy between dicamba and other herbicides. We would suggest that it may also be helpful to have an open discussion about the dicamba drift issues resulting from the illegal use of dicamba in DT crops this year, as well as the propose inadvertent dicamba residue tolerances. We would be happy to discuss any other issues or concerns that EPA is wrestling with over the proposed dicamba DT use decision.

Myself and two or three other individuals from BASF will participate in the meeting. In addition to yourself BASF would like to suggest that the following EPA individuals participate in the meeting:

Rick Keigwin
Mike Goodis
Dan Kenny

Kay Montague
Representatives from EFED

It would be great if we could find time to have the meeting within the next couple of weeks.

Please let me know if you have any questions, and thank you in advance to trying to setup this meeting.

Have a great weekend,

Jeff

Jeffrey H. Birk, Ph.D.
Product Registration Manager

Phone: 919-547-2622 Mobile: 919-225-9220 E-Mail: jeffrey.birk@basf.com
Postal Address: 26 Davis Drive, RTP, NC 27709

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Appointment

From: Dinkins, Darlene [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5E8CE07DBBCC49CE86097F4A1F207BD6-DARLENE R. DINKINS]
Sent: 8/17/2016 10:14:50 PM
To: Keigwin, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=151baabb6a2246a3a312f12a706c0a05-Richard P Keigwin Jr]; Goodis, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=50ed0b92dc4945b7a808fe8dbc9224f0-Michael Goodis]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]; Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]; Cowles, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=684502c4acad4894b1fed6fae1c6d74d-Cowles, James]; Ada M Breaux [ada.breaux@basf.com]; John J Arthur [john.arthur@basf.com]; Richard L Braddock [richard.braddock@basf.com]; Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]
CC: Corbin, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1db182663b134e46b3fec580f8e0b5f2-Mark Corbin]; Jeffrey H Birk [jeffrey.birk@basf.com]
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Location: S12621
Start: 9/8/2016 1:00:00 PM
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Sent: Friday, August 05, 2016 3:19 PM
To: Rowland, Grant <Rowland.Grant@epa.gov>
Cc: Ada M Breaux <ada.breaux@basf.com>; John J Arthur <john.arthur@basf.com>; Richard L Braddock <richard.braddock@basf.com>
Subject: Proposed meeting with BASF

Hello Grant,

Ada Breaux, has been speaking with Dan Kenny, and they agreed that it might be best if BASF could get together with a small group from EPA to talk through the pending DT use registration and Engenia herbicide. I can send a proposed agenda next week, but it would include a brief overview of what BASF has been doing to address concerns about dicamba volatility and potential synergy between dicamba and other herbicides. We would suggest that it may also be helpful to have an open discussion about the dicamba drift issues resulting from the illegal use of dicamba in DT crops this year, as well as the propose inadvertent dicamba residue tolerances. We would be happy to discuss any other issues or concerns that EPA is wrestling with over the proposed dicamba DT use decision.

Myself and two or three other individuals from BASF will participate in the meeting. In addition to yourself BASF would like to suggest that the following EPA individuals participate in the meeting:

Rick Keigwin
Mike Goodis
Dan Kenny
Kay Montague
Representatives from EFED

It would be great if we could find time to have the meeting within the next couple of weeks.

Please let me know if you have any questions, and thank you in advance to trying to setup this meeting.

Have a great weekend,

Jeff

Jeffrey H. Birk, Ph.D.
Product Registration Manager

Phone: 919-547-2622 Mobile: 919-225-9220 E-Mail: jeffrey.birk@basf.com
Postal Address: 26 Davis Drive, RTP, NC 27709

All contents of this e-mail and any attachments there to are confidential unless explicitly specified otherwise in this e-mail. If you are not the intended recipient, you are hereby formally notified that any use, copying or distribution of this e-mail, in whole or in part, is strictly prohibited. Please notify the sender by return e-mail and delete this e-mail from your system.

Message

From: Jeffrey H Birk [jeffrey.birk@basf.com]
Sent: 5/24/2017 10:55:57 AM
To: Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]
CC: Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
Subject: RE: Engenia premix with pyroxasulfone herbicide?

Kay,

Thank you for the input. We will take that into consideration.

Enjoy your day.

Jeff

Sent from my Windows Phone

From: Montague, Kathryn V.
Sent: 5/23/2017 16:03
To: Jeffrey H Birk
Cc: Rowland, Grant; Kenny, Daniel
Subject: RE: Engenia premix with pyroxasulfone herbicide?

Hi, Jeff,

EFED feels that your logic/rationale has merit, but would need additional information/data to support the claims before they could make a determination on waiving the field flux study. You may want to consider developing a "white paper" on it, with some data and/or citations of data to support your claims, and submitting that as a PRIA R124 (pre-application determination of waivers) before you finalize your submission plans.

Best Regards,
Kay

From: Jeffrey H Birk [mailto:jeffrey.birk@basf.com]
Sent: Tuesday, May 23, 2017 7:59 AM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>
Cc: Rowland, Grant <Rowland.Grant@epa.gov>
Subject: RE: Engenia premix with pyroxasulfone herbicide?

Good Morning Kay,

Just checking to see if you had a chance to get a decision from EFED on the need for field flux data with a dicamba premix that would not be expected to be different from Engenia alone?

Thanks,

Jeff

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Tuesday, April 25, 2017 2:48 PM
To: Jeffrey H Birk <jeffrey.birk@basf.com>
Cc: Rowland, Grant <Rowland.Grant@epa.gov>
Subject: RE: Engenia premix with pyroxasulfone herbicide?

Hi, Jeff,

I'll need to run this by EFED. They pretty much require a standard set of data for everything with these uses/products, so I'm not sure you'll be able to not do the field flux testing, but I will let you know what they say.

Best Regards,
Kay

From: Jeffrey H Birk [<mailto:jeffrey.birk@basf.com>]
Sent: Tuesday, April 25, 2017 9:35 AM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>
Cc: Rowland, Grant <Rowland.Grant@epa.gov>
Subject: Engenia premix with pyroxasulfone herbicide?

Hello Kay,

BASF is in the process of developing a new end-use-product containing the BAPMA salt of dicamba and pyroxasulfone herbicide for use in DT cotton and soybeans. BASF expects to be able to submit this new dicamba premix for registration in 1Q18. In putting the development program together, the question about the need for field flux testing came up. After discussing internally and considering any impact that this premix may have on the overall volatility characteristics of the BAPMA salt of dicamba, BASF has concluded that the volatility concern for this proposed premix would be no different than that for Engenia herbicide, and therefore, no additional field flux data should be required. The reasoning for this decision is as follows:

- The new product contains the BAPMA salt of dicamba, which has already been evaluated for field flux, as Engenia herbicide.
- Pyroxasulfone herbicide is not volatile.
- Pyroxasulfone is non-ionic and is not formulated as a salt
- There are no other salt forming components in the product formulation that can degrade the low volatility nature of the dicamba/BAPMA salt.
- There is no expectation that the volatility potential of this BAPMA salt of dicamba and pyroxasulfone herbicide premix will be different than Engenia.

Please let me know as soon as possible if EFED should disagree with this conclusion. Any required field flux studies will need to be conducted in 2017 to meet our 1Q18 submission target.

Thanks,

Jeff

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From: Montague, Kathryn V. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C50D485150734F6E85059D64DD80A353-KATHRYN V. MONTAGUE]
Sent: 5/23/2017 8:02:55 PM
To: Jeffrey H Birk [jeffrey.birk@basf.com]
CC: Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
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Jeff

Message

From: MARVIN, THOMAS [AG/1920] [thomas.marvin@monsanto.com]
Sent: 5/19/2017 7:44:50 PM
To: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
CC: Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]; Metzger, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=655bc1c05459419d8bb3ba9a16568c3f-Michael S. Metzger]; Corbin, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1db182663b134e46b3fec580f8e0b5f2-Mark Corbin]; Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]
Subject: RE: Dicamba Pre-sub Dates
Attachments: EthanolAmine_EPA_Presub_meeting_5-11-17_FINAL.PDF; EA_VEGvigor_EPA_discussion.pdf

Dan, All:

Thank you for meeting with us last week to discuss our pending submissions for three high-load dicamba products. Please find attached the slides we presented.

Mark: Also attached is a revised slide (with notes) elaborating on our position that additional dicamba veg. vigor data should not be necessary.

Thank you again for your time and feedback. Please do not hesitate to contact me if there is any additional information we can provide in advance of our submissions in early June.

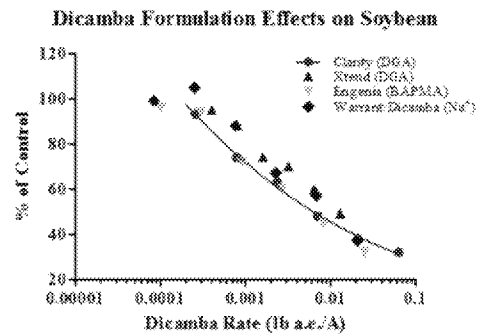
Tom

Tom Marvin
Director, Federal Regulatory Affairs
1300 I Street, NW
Washington, DC 20005
Cell: 314-308-6836
Desk: 314-694-7901

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Existing formulation data sufficient to protect non-target plants

- **No salt-specific VEG vigor study needed**
- EA salt is not new
- Salt is not affecting phytotoxicity to sensitive plants



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 2 | © 2014 Monsanto Company. All rights reserved.

- Conclusion drawn from 4 veg vigor studies across 3 different salts
- Response variable presented in the graph based on most sensitive indications (height or weight)
- Supports argument that VEG vigor studies are NOT needed for EA
- No difference in use pattern, therefore, no difference in exposure, no difference is toxicity,
- Current risk assessment valid and covers EA formulations



EPA Pre-Submission Meeting Dicamba Ethanolamine Submissions

Simone Seifert-Higgins
May 11, 2017

MONSANTO
GLOBAL REGULATORY
AND GOVERNMENT AFFAIRS



ED_002084_00042401-00001

Agenda

1. Product concept for Dicamba ethanolamine (EA)-based formulations
2. Data strategy and bridging arguments
3. Review of PRIA and supporting documents for submission



Product Description: **Dicamba Ethanolamine Formulations**

Product Concept: Provide grower benefits and enhanced dicamba choices with high-load formulations based on Dicamba ethanolamine (EA)

Products (submit June 1, 2017):

1. Dicamba EA Manufacturing Product
2. Dicamba EA End Use formulation
3. Dicamba EA + Glyphosate EA premix formulation



Registration to enable commercial introduction in 2019

- Same use pattern (application rates and timing) as already approved dicamba formulations
- Conventional uses and OTT
 - DGT cotton (Cotton with XtendFlex Technology)
 - DT soybean (Roundup Ready 2 Xtend soybean)
 - Dicamba/glufosinate/glyphosate-tolerant corn (HT corn; pending initial registration)



EA salt formulations similar to other Dicamba salts

- EA high-load dicamba formulations similar to existing DGA formulation
- No change to currently approved use patterns
- No change in expected residue, toxicology, environmental impact, dietary & occupational exposure
- EA salt is not new
 - GLY 135EA Technical Solution (EPA Reg. 524-611)



Data strategy: Dicamba acid data “surrogate” data for Dicamba EA

- Rapid conversion of several dicamba salts to the free acid of dicamba¹
 - Na, K, DMA, IPA and DGA dicamba salts completely dissociate to dicamba acid within 75 seconds¹
 - Dicamba EA salt dissociation rate determined at pH 7: 0.071 per second²

¹ EPA-EFED Reregistration Chapter for Dicamba/Dicamba Salts. August 31, 2015.

² Dicamba: Determination of rate of dissociation. Monsanto MSL0028171



Existing Dicamba residue supports EA formulation registration

- Same use pattern, rate and timing as approved conventional and OTT uses in soybean and cotton
- Existing tolerances cover proposed uses of EA salt formulations
- No new residue data needed
 - EPA previously concluded equivalency between DGA and EA salts from residue studies for soybean and cotton¹

¹ EPA: Dicamba. Section 3 Registration of the Amended Use of Dicamba on Dicamba-tolerant cotton. Summary of Analytical Chemistry and Residue Data. March 29, 2016.

EA dicamba toxicology similar to DGA

- No change in use pattern to previously registered dicamba formulation
- Tox profile similar for DGA and EA dicamba
 - Dicamba and Dicamba BAPMA Salt: Human-Health Risk Assessment for Proposed Section 3 New Uses on Dicamba-tolerant Cotton and Soybean. March 29, 2016. Decision No.: 432752, 467997, 463710
- EA salt is not new; therefore, no salt-specific studies necessary



Existing Dicamba exposure data & risk assessments apply to EA salt

- Identical use pattern including rates & timing and therefore, no change in exposure expected
- Existing data and risk assessments apply
 - EPA. Dicamba, Occupational and Residential Exposure Assessment for a Proposed Use on Herbicide-Tolerance Soybean and Cotton. March 29, 2016. Decision No.: 463710



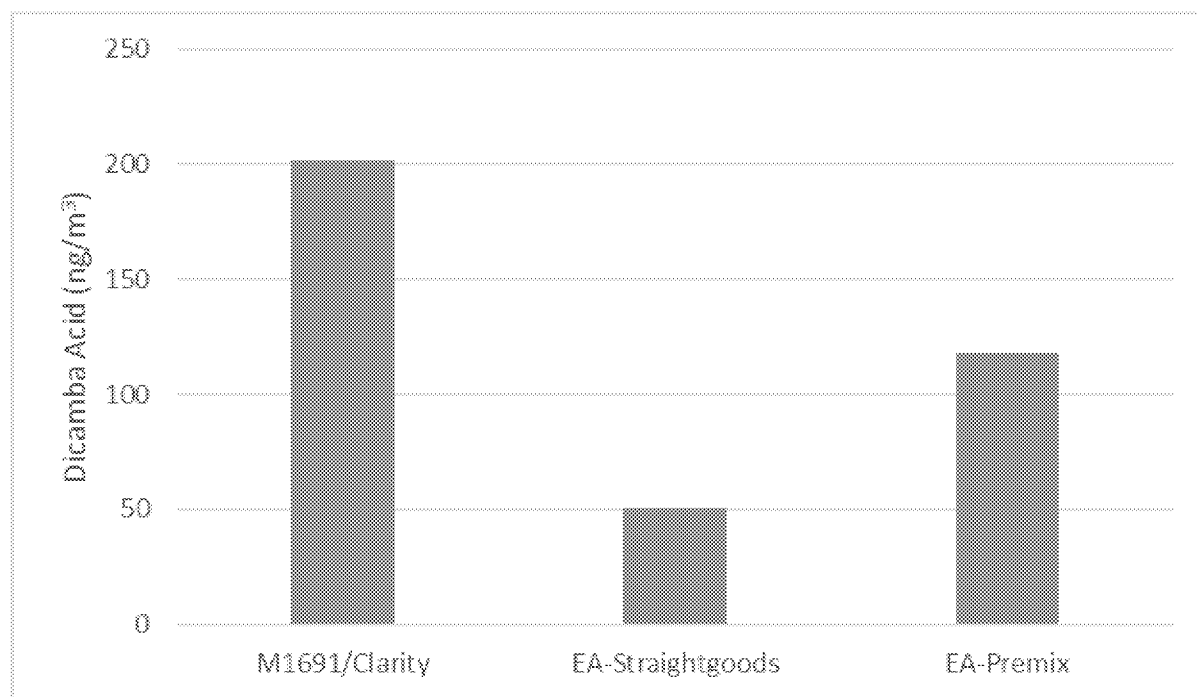
Downwind buffer for DGA dicamba applicable for EA dicamba

- EPA previously concluded that only a downwind buffer is needed for DGA formulations such as M1691/Clarity®
 - Downwind buffer for dicamba DGA formulations can also be applied to EA dicamba formulations
 - Downwind buffer is protective of TES from both drift and volatility



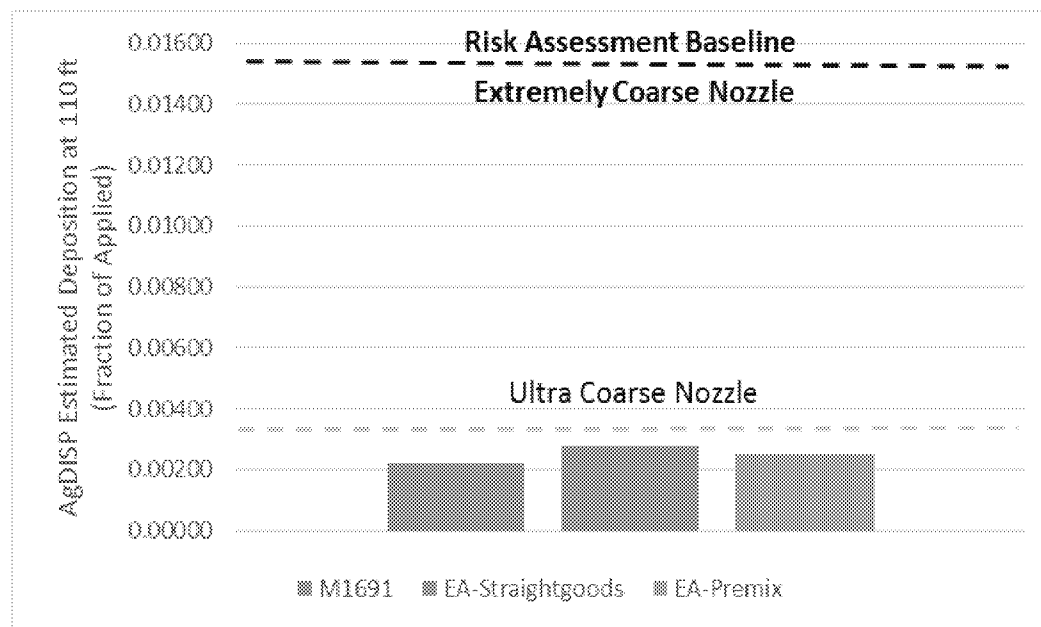
EA relative volatility is less than M1691 Herbicide

- Humidome volatility results validate that relative volatility of EA dicamba formulations is less than M1691/Clarity®



EA dicamba formulations have drift potential that fits with EPA's TES assessment formulations

- Similar drift potential compared to DGA
- Drop size classification is UC/XC
- Fits within EPA's TES assessment for DGA



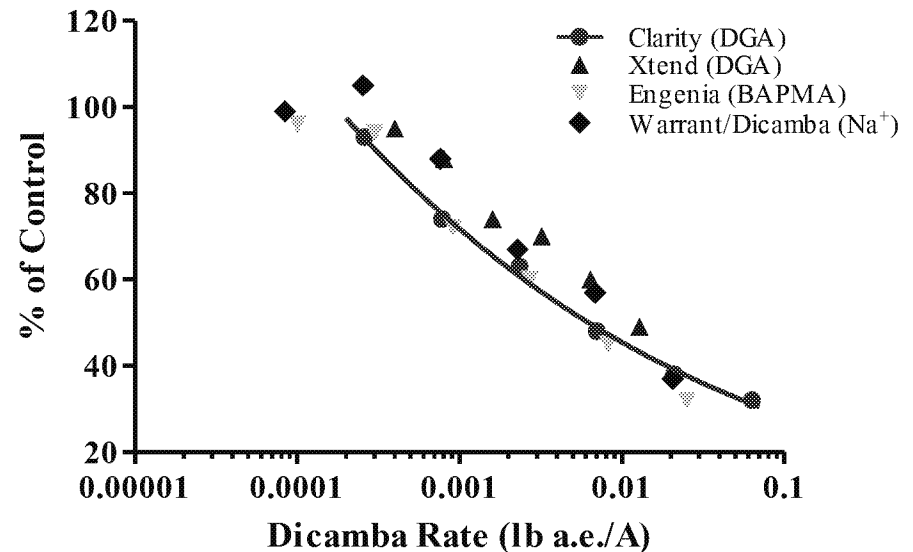
TTI11004 nozzle



Existing formulation data sufficient to protect non-target plants

- **No salt-specific VEG vigor study needed**
- EA salt is not new
- Salt is not affecting phytotoxicity to sensitive plants

Dicamba Formulation Effects on Soybean



Summary

- EA dicamba equivalent to DGA dicamba for EPA's risk assessment
- No change in toxicity, expected residues, exposure, and environmental risk
 - Same use pattern as existing dicamba formulations
 - Rapid dissociation to dicamba acid (Existing data supporting dicamba acid and other salt formulations will be applicable)
- EA salt is not new; therefore, no salt-specific studies necessary

PRIA R320 for end use product; PRIA R310 for MP

- Simultaneous review of 3 products
- PRIA R320 (12+1 month, data review by science division) for end use products:
 1. Dicamba EA Straightgoods
 2. Dicamba EA + Glyphosate EA premix
- PRIA R310 (7+1 month) for MP:
 1. Dicamba EA Manufacturing Product
- Planned submission: June 1, 2017



End Use products - PRIA R320

- Submission will include:

Category Requirements

Cover Letter & 8570-1

Confidential Statement of Formula

Product Chemistry and Toxicology reports

Executive summary including arguments for salt bridging
(Current assessment for TES, toxicology, residues and
exposure are applicable)

Data assessing volatility & drift potential
(humidome, windtunnel)

Data waiver requests

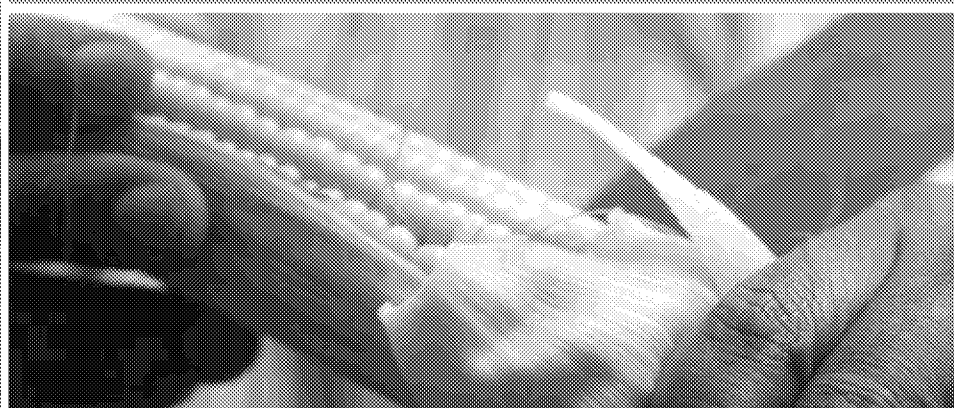
Proposed Labeling

Additional Documents?





Thank you!



Backup Slides



EA toxicology classification same as DGA

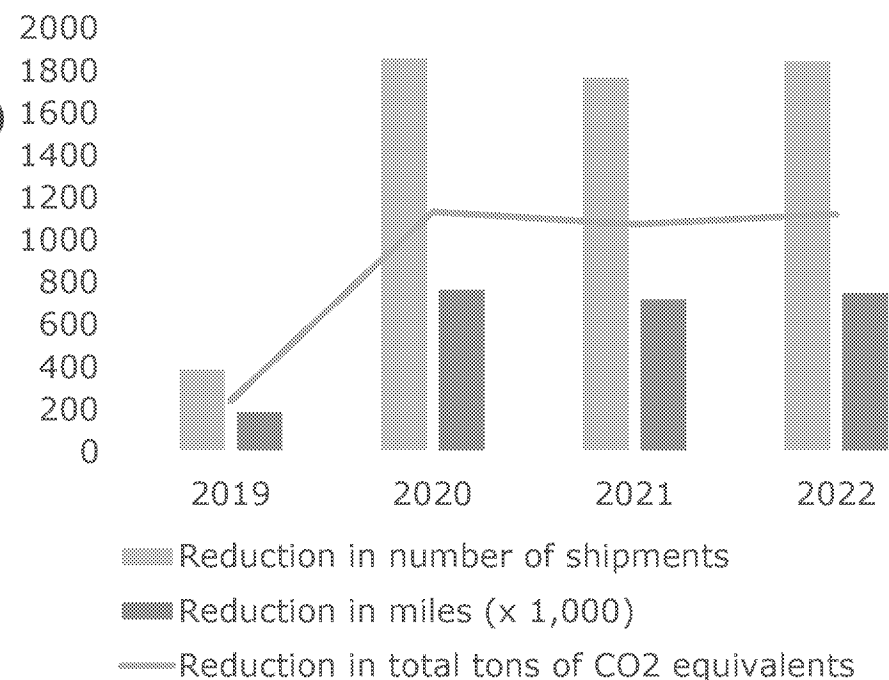
	Dicamba		Dicamba + Glyphosate	
	EA	XtendiMAX	EA	Roundup Xtend
Acute oral	Cat. III		Cat. IV	
Acute dermal			Cat. IV	
Acute inhalation			Cat. IV	
Eye irritation			Cat. III	
Dermal sensitization			negative	



High load Dicamba will substantially reduce number of shipments, miles traveled and CO₂ emissions

- EA dicamba is 1/3 more concentrated compared to Roundup Xtend/XtendiMax
- For every gallon of Xtend/XtendiMax delivered only 3/4 gallon of EA dicamba will be needed

Substantial Reduction in Carbon Footprint



Message

From: BHAKTA, TINA [AG/1000] [tina.bhakta@monsanto.com]
Sent: 2/3/2017 8:06:42 PM
To: Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]
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Subject: RE: 524-616: Roundup Xtend R350 - request for renegotiating the PRIA due date

Kay,

I have discussed with my leadership and we were hoping for the following; confirmation from EPA for clearance of glyphosate from synergy with dicamba so that we can move forward with enabling tank mixing with our current Xtendimax label assuming wind tunnel results look good, in this case EPA agrees that instead of waiting till final label is issued for RU xtend at the end of the new PRIA that we will be notified as soon as the results from the NTP come back from the contractor in Feb (also can this be brought back in house to get better line of sight for completion). The second would be if the PRIA date could be April 1st instead as that may still enable an option to launch the premix in some areas in 2017.

If we can get confirmation of above, we can agree to a PRIA extension.

Thank you

Tina Bhakta Ph.D.
Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [mailto:Montague.Kathryn@epa.gov]
Sent: Thursday, February 02, 2017 4:05 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Cc: Rowland, Grant <Rowland.Grant@epa.gov>; Kenny, Daniel <Kenny.Dan@epa.gov>
Subject: Re: 524-616: Roundup Xtend R350 - request for renegotiating the PRIA due date

Hello, Tina,

I posed the question to EFED and we have a discussion next Tuesday to sort it all out. Unfortunately I need to renegotiate now, since the date is Monday. RD and upper management are asking me where the paperwork is. Can we please go with April 30 now, but with the understanding that your additional ask may require a bit longer to include?

Thanks
Kay

Sent from my iPhone

On Feb 2, 2017, at 4:36 PM, BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com> wrote:

Thanks for the message Kay- based on our discussion I didn't realize that there would almost a 3 month delay on approval of the premix. As I mentioned in the call I would like the field deposition for RU Xtend to be considered as part of this approval since we had submitted that on April 12, 2016 under a data review so that it would be reviewed before the label amendment. We would like an alternate baseline to be considered for the addition of tank mix partners that would reflect those conditions that we tested

in the field TTI 11003 nozzles at 50 psi which generated a buffer distance of 52.8 ft at the NOER. In addition, rapid clearance of any synergy between dicamba and glyphosate since that study was also submitted on Nov 15th, 2016 which clearly shows no impact so that we can move forward to enablement of tank mixing with our Xtendimax product.

Please confirm that this can be done in the 3 months that you have suggested.

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Thank you,
Kay

This email and any attachments were sent from a Monsanto email account and may contain confidential and/or privileged information. If you are not the intended recipient, please contact the sender and delete this email and any attachments immediately. Any unauthorized use, including disclosing, printing, storing, copying or distributing this email, is prohibited. All emails and attachments sent to or from Monsanto email accounts may be subject to monitoring, reading, and archiving by Monsanto, including its affiliates and subsidiaries, as permitted by applicable law. Thank you.

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Thank you,
Kay

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Message

From: Montague, Kathryn V. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C50D485150734F6E85059D64DD80A353-KATHRYN V. MONTAGUE]
Sent: 2/10/2017 1:26:11 PM
To: CUBBAGE, JERRY W [AG/1000] [jerry.w.cubbage@monsanto.com]; Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]
CC: NYANGULU, JAMES M [AG/1920] [james.m.nyangulu@monsanto.com]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
Subject: RE: HRM Educational plan submission for Xtendimax with VaporGrip Technology (EPA Reg. No. 524-617)

Thank you, Jerry, confirming receipt of your Educational Plan.

Best Regards,
Kay

From: CUBBAGE, JERRY W [AG/1000] [mailto:jerry.w.cubbage@monsanto.com]
Sent: Thursday, February 09, 2017 6:44 PM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>
Cc: NYANGULU, JAMES M [AG/1920] <james.m.nyangulu@monsanto.com>
Subject: HRM Educational plan submission for Xtendimax with VaporGrip Technology (EPA Reg. No. 524-617)

Kay and Grant,

Good evening, I tried today to submit our Educational Plan on Herbicide Resistance Management per the Terms and Condition of Registration Appendix D for Xtendimax with VaporGrip Technology uses on dicamba tolerant soybeans and cotton (EPA Reg. No. 524-617, Decision No. 522837, 516207, and 511766) and the Educational plan got corrupted in the upload to the electronic submission portal. I will have our document specialist try the upload tomorrow again.

Please find a courtesy copy of the cover letter, 8570-1 form, and Educational Plan.

Please let me know that you have received these documents at your earliest convenience.

Thanks
Jerry

*Jerry W. Cubbage, Ph.D.
Monsanto Company
800 N. Lindbergh Blvd.
C3518N/C3NA
Creve Coeur, MO 63167
Office: 314-694-7350
Cell: 636-236-8894
Email: jerry.w.cubbage@monsanto.com*

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Sent: 2/7/2017 9:53:12 PM
To: BHAKTA, TINA [AG/1000] [tina.bhakta@monsanto.com]
CC: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]; Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]
Subject: Roundup Xtend (352-616)

Hi, Tina,

Sorry I'm late answering your voice message, I've been running between meetings all day. Since we didn't reach an agreement on the renegotiation date, the action has fallen out of PRIA. That said, EFED is still expecting the vegetative vigor study review back from the contractor by mid-February, and the field deposition data hopefully at the same time or shortly thereafter. The veg vigor is of course critical in determining how much additional work is remaining to reach a decision on the premix product. As we discussed previously, if the mix of glyphosate + dicamba DGA is more phytotoxic than the DGA alone, significant rework may be required to calculate a buffer distance that remains protective. If it shows comparable or less phytotoxicity than the DGA endpoint, the study can give you a green light on the synergy requirement for dicamba DGA + glyphosate. We will let you know as soon as possible what our findings are on that, but I can't give you a meaningful answer on the exact timing at this point. We'll still need to have your self-certification on the drift part of the tank-mix requirements, however, before you can add glyphosate to your website as an Xtendimax tank mix partner. The drift study needs to be done per the Appendix A instructions on the Xtendimax registration document. Is this something Monsanto has already submitted?

As far as addressing your request to modify the baseline used in the Appendix A protocol, this is better addressed through a separate PRIA submission. EFED will need to look at several pieces of data to make a determination on this, and it seems cleaner to handle it on a separate track than to try to roll it in with the other parts of the determination on the premix product.

I'm about to head out of the office for today, but I will be in the office the rest of the week if you would like to discuss any of this further.

Best Regards,
Kay

Message

From: BHAKTA, TINA [AG/1000] [tina.bhakta@monsanto.com]
Sent: 1/31/2017 8:01:15 PM
To: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
CC: Montague, Kathryn V. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c50d485150734f6e85059d64dd80a353-Kathryn V. Montague]; Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]
Subject: RE: Dicamba

Dan,

Thank you for the note.

For the conversation with OECA, I would like to include Tom Marvin that I mentioned in my vm, he will be our new director for Regulatory affairs in DC. He actually will be part of a broader tour of the EPA next week Tuesday 3-5pm, if there would be an opportunity then he could join you personally anytime that day, for the rest of the week, we will accommodate the timing that you can get so feel free to suggest times that work for you as well. Look forward to hearing back from you.

I will wait for Kay to give me a call as there are some things I would like to discuss on the RU Xtend submission.

For the original submissions, please call me as we will likely move forward with one of the options you had mentioned to us earlier.

Thanks again

Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

From: Kenny, Daniel [mailto:Kenny.Dan@epa.gov]
Sent: Monday, January 30, 2017 5:01 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Cc: Montague, Kathryn V. <Montague.Kathryn@epa.gov>; Rowland, Grant <Rowland.Grant@epa.gov>
Subject: Dicamba

Hello Tina. Just a quick note to let you know that I am in the process of trying to set up a call with OECA on the dicamba seed issue. I'll try to give you a call as soon as I hear back from them on who needs to attend so that we can pick a day. In the meantime, are there any days/times either this week or next that will not work for you?

Also, Kay is going to reach out to you to see if you are interested in renegotiating the dicamba/glyphosate premix. We've heard back from EFED, and although they still expect to get the vegetative vigor studies from the contractors in February, the volatility pieces may not be back until March. Kay is preparing to discuss this with you further.

I'll also need to talk with you about the original dicamba soybean/cotton applications. I am getting some pressure to close those out, so if you prefer to leave them open, we will need to determine a course of action very soon.

If you are available tomorrow, I'll try to give you a call.

Thanks,

Dan

Daniel Kenny
Chief, Herbicide Branch
Registration Division
Office of Pesticide Programs
U.S. Environmental Protection Agency

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Sent: 1/4/2017 8:10:50 PM
To: BHAKTA, TINA [AG/1000] [tina.bhakta@monsanto.com]
CC: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
Subject: Re: Dicamba

Phone died redialing

Sent from my iPhone

On Jan 4, 2017, at 3:01 PM, BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com> wrote:

we cannot get on, the conference code is not valid.

Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Wednesday, January 04, 2017 2:00 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Cc: Kenny, Daniel <Kenny.Dan@epa.gov>
Subject: Re: Dicamba

Ok will set up the line now

Sent from my iPhone

On Jan 4, 2017, at 2:59 PM, BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com> wrote:

We will talk discuss all that you have suggested with exception of volatility. So we will need efed. I can ask about the label questions off line with you.

Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Wednesday, January 04, 2017 1:58 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Cc: Kenny, Daniel <Kenny.Dan@epa.gov>
Subject: RE: Dicamba

Hi, Tina,

So do you no longer need EFED for this meeting? Sounds like more of a labeling question.

We can't really discuss another company's labeling with you. We've noted the concerns you pointed out in your voicemail to Dan, and we will look into those. Are there

more? If we're not going to discuss the volatility or drift topics, not sure if we still need this call?

Best Regards,
Kay

From: BHAKTA, TINA [AG/1000] [<mailto:tina.bhakta@monsanto.com>]
Sent: Wednesday, January 04, 2017 12:46 PM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>
Subject: RE: Dicamba

Thanks Kay;

Since we do not have much time can we not discuss the volatility protocol today?? We have been working with all of our partners to ensure that they are following the same stewardship as us, only moving those products forward that will not cause an issue from a volatility stand point.

We would like to discuss a couple of items on the newly approved engenia label on differences that were not reflected on our Xtendimax label that can apply to our label too. And an update on the Round up Xtend data review.

Thanks and talk to you soon

Tina Bhakta Ph.D.
Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Tuesday, January 03, 2017 4:29 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Subject: RE: Dicamba

Hi, Tina,

It will be RD (me, Dan, Grant) and EFED (Mark Corbin, Monica Wait, Chuck Peck, and possibly others). Based on our previous conversations, I believe we should be discussing:

- <!--[if !supportLists]--><!--[endif]-->Revisions to Appendix A (the drift protocol for tank mixes) to use data for M1768 as the "baseline" vs data for M1691
- <!--[if !supportLists]--><!--[endif]-->Possibility and process for adding a volatility protocol and testing requirement for tank mix partners
- <!--[if !supportLists]--><!--[endif]-->Status of the tank mix data you've already submitted

Does that agree with your understanding/expectations?

Best Regards,
Kay

From: BHAKTA, TINA [AG/1000] [<mailto:tina.bhakta@monsanto.com>]
Sent: Tuesday, January 03, 2017 4:48 PM

To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>; NYANGULU, JAMES M [AG/1920] <james.m.nyangulu@monsanto.com>; Kenny, Daniel <Kenny.Dan@epa.gov>
Subject: RE: Dicamba

Hi Kay,

Happy new year! I hope you had a good break.

Can you let us know who else will be attending this call? Is this to discuss the tank mixing protocol?

Thanks

Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [mailto:Montague.Kathryn@epa.gov]
Sent: Tuesday, January 03, 2017 2:03 PM
To: NYANGULU, JAMES M [AG/1920] <james.m.nyangulu@monsanto.com>; Kenny, Daniel <Kenny.Dan@epa.gov>; BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Subject: RE: Dicamba

Hi, James,

We can't use Webex...please call us using the following information:

Phone / Ex. 6

-----Original Appointment-----

From: NYANGULU, JAMES M [AG/1920] [mailto:james.m.nyangulu@monsanto.com]
Sent: Wednesday, December 14, 2016 1:34 PM
To: NYANGULU, JAMES M [AG/1920]; Montague, Kathryn V.; Kenny, Daniel; BHAKTA, TINA [AG/1000]
Subject: Dicamba
When: Wednesday, January 04, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: WebEx

When: Wednesday, January 04, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: WebEx

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Call-in toll-free number (US/Canada)
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Meeting Number: **Phone / Ex. 6**

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Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

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CC: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
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Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

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Subject: RE: Dicamba

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Since we do not have much time can we not discuss the volatility protocol today?? We have been working with all of our partners to ensure that they are following the same stewardship as us, only moving those products forward that will not cause an issue from a volatility stand point.

We would like to discuss a couple of items on the newly approved engenia label on differences that were not reflected on our Xtendimax label that can apply to our label too. And an update on the Round up Xtend data review.

Thanks and talk to you soon

Tina Bhakta Ph.D.

Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Tuesday, January 03, 2017 4:29 PM
To: BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Subject: RE: Dicamba

Hi, Tina,

It will be RD (me, Dan, Grant) and EFED (Mark Corbin, Monica Wait, Chuck Peck, and possibly others). Based on our previous conversations, I believe we should be discussing:

- Revisions to Appendix A (the drift protocol for tank mixes) to use data for M1768 as the "baseline" vs data for M1691
- Possibility and process for adding a volatility protocol and testing requirement for tank mix partners
- Status of the tank mix data you've already submitted

Does that agree with your understanding/expectations?

Best Regards,
Kay

From: BHAKTA, TINA [AG/1000] [<mailto:tina.bhakta@monsanto.com>]
Sent: Tuesday, January 03, 2017 4:48 PM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>; NYANGULU, JAMES M [AG/1920] <james.m.nyangulu@monsanto.com>; Kenny, Daniel <Kenny.Dan@epa.gov>
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Hi Kay,

Happy new year! I hope you had a good break.

Can you let us know who else will be attending this call? Is this to discuss the tank mixing protocol?

Thanks

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Global Chemistry Expansion Lead, Regulatory

From: Montague, Kathryn V. [<mailto:Montague.Kathryn@epa.gov>]
Sent: Tuesday, January 03, 2017 2:03 PM
To: NYANGULU, JAMES M [AG/1920] <james.m.nyangulu@monsanto.com>; Kenny, Daniel <Kenny.Dan@epa.gov>; BHAKTA, TINA [AG/1000] <tina.bhakta@monsanto.com>
Subject: RE: Dicamba

Hi, James,

We can't use Webex...please call us using the following information:

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Conf code: **Phone / Ex. 6**

-----Original Appointment-----

From: NYANGULU, JAMES M [AG/1920] [<mailto:james.m.nyangulu@monsanto.com>]

Sent: Wednesday, December 14, 2016 1:34 PM

To: NYANGULU, JAMES M [AG/1920]; Montague, Kathryn V.; Kenny, Daniel; BHAKTA, TINA [AG/1000]

Subject: Dicamba

When: Wednesday, January 04, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: WebEx

When: Wednesday, January 04, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: WebEx

Note: The GMT offset above does not reflect daylight saving time adjustments.

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Message

From: Montague, Kathryn V. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C50D485150734F6E85059D64DD80A353-KATHRYN V. MONTAGUE]
Sent: 1/4/2017 7:58:04 PM
To: BHAKTA, TINA [AG/1000] [tina.bhakta@monsanto.com]
CC: Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]
Subject: RE: Dicamba

Hi, Tina,

So do you no longer need EFED for this meeting? Sounds like more of a labeling question.

We can't really discuss another company's labeling with you. We've noted the concerns you pointed out in your voicemail to Dan, and we will look into those. Are there more? If we're not going to discuss the volatility or drift topics, not sure if we still need this call?

Best Regards,
Kay

From: BHAKTA, TINA [AG/1000] [mailto:tina.bhakta@monsanto.com]
Sent: Wednesday, January 04, 2017 12:46 PM
To: Montague, Kathryn V. <Montague.Kathryn@epa.gov>
Subject: RE: Dicamba

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Message

From: Jeffrey H Birk [jeffrey.birk@basf.com]
Sent: 11/17/2016 6:59:40 PM
To: Rowland, Grant [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5b004bc79f1f40b0a181a584a8c64495-Rowland, Grant]; Kenny, Daniel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1be9bb592f144269bcd41dd3a6d8a6d4-Daniel C. Kenny]; Corbin, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1db182663b134e46b3fec580f8e0b5f2-Mark Corbin]
CC: Richard L Braddock [richard.braddock@basf.com]; Maximilian M Safarpour [maximilian.safarpour@basf.com]; John J Arthur [john.arthur@basf.com]; Andrew J Goetz [andrew.goetz@basf.com]
Subject: BASF evaluation of Engenia Veg Vigor study
Attachments: Wind tunnel_Study Adjuvants 2016-7010997.pdf; US Patents Dicamba and Glyphosate 11-14-16 (002).pdf; Engenia Veg Vigor NOAEC discussion (11-17-16).pdf

Hello Grant,

I am sending a BASF Evaluation of the Engenia™ herbicide Vegetative Vigor Study (MRID 48718015) Consistent with the EFED Evaluation of the Clarity® herbicide Vegetative Vigor Study, based upon the April 25, 2013 EFED Addendum to the Date Evaluation Report on the Toxicity of the Clarity® 4.0 SL herbicide (AI:Dicamba) to Terrestrial Vascular Plants: Vegetative Vigor (MRID 47815102)

BASF believes that using the same approach that EFED used with the Clarity herbicide veg vigor study will lead to a NOAEC for Engenia that is much closer to the established NOAEC for Clarity.

Additionally I expect to be able to send you the Deposition Modeling report from the Engenia field flux study, later today or tomorrow at the latest.

I want to also bring to your attention that last week I submitted an additional set of wind tunnel data (MRID 50106001), with testing performed exclusively with Engenia tank mixtures with spray adjuvants. With an expectation that pesticide tank mixtures will be prohibited, this most recent set of wind tunnel data would be BASF's highest priority since it specifically supports the use of spray adjuvants with Engenia.

Today I also submitted the results from a BASF conducted patent search for granted US patents claiming herbicidal synergy between the dicamba BAPMA salt and glyphosate (MRID 50110501).

Copies of both the Wind Tunnel evaluation report and the Synergy Patent review are attached for your convenience.

Please let me know if you have any questions or comments.

Thanks,

Jeff

Jeffrey H. Birk, Ph.D.
Product Registration Manager

Phone: 919-547-2622 Mobile: 919-225-9220 E-Mail: jeffrey.birk@basf.com
Postal Address: 26 Davis Drive, RTP, NC 27709

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